A STUDY ON INFRASTRUCTURE FACILITIES AND ITS INFLUENCE ON SPORTS ACHIEVEMENT OF KARNATAKA AND KERALA STATE UNIVERSITIES

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CHAPTER I
INTRODUCTION

1.1 PREAMBLE

Sports are physical activities that help maintain and improve people's health when practiced regularly. Regular exercise keeps the body healthy and fit. Sports encompass structured activities aimed at nurturing and developing one's physical, mental, and spiritual potential. The objectives of national sports, as outlined in policy, include maintaining and improving health and fitness, fostering achievement, enhancing human qualities, instilling moral values and good character, promoting sportsmanship and discipline, strengthening national unity and security, and upholding the dignity and honor of the nation.

As highlighted, one key purpose of sports is the pursuit of excellence. Achievements in sports are nurtured through a systematic, tiered, and sustainable approach, supported by competitions, knowledge, and advancements in sports technology. For success in sports, two crucial factors are required: skilled human resources and well-developed training facilities (infrastructure). Without these, achieving high performance becomes difficult. Additionally, institutions play an important role in supporting athletes. Schools, colleges, and universities provide essential support, particularly for students in high school or higher education who are highly motivated to excel in sports.

Colleges are educational institutions that systematically and purposefully organize learning activities, led by professional educators and guided by structured curricula. These institutions support students at various levels, from childhood through to higher education. In Karnataka and Kerala, universities are striving to elevate sports achievements to the highest level. Notable sports where athletes have the potential to win medals include athletics, kabaddi, volleyball, basketball, badminton, wrestling, and kho-kho, among others.

Bucher (1975) Sports and games play a crucial role in our well-being. They promote physical health, keep us active, and offer a refreshing break from our daily

routines. Serving as both recreation and physical exercise, sports help build character, strength, and mental resilience. Through sports, we develop vital life skills such as maintaining balance between hope and disappointment, handling challenging situations, and building strong friendships. They foster teamwork, improve mental and physical fitness, and contribute to the formation of a strong, active body by enhancing blood circulation and overall health.

To promoting physical well-being, sports enhance our efficiency by relieving mental fatigue, making them an essential part of education. Without sports, education is incomplete. From an early age, children are introduced to sports, which are now an integral part of school curricula. This helps in their physical and mental development, instilling good values and character. Competitive sports at the school and college levels offer students opportunities to progress to national and international competitions, fostering the development of sports careers.

Today, sports have also become a commercial avenue, offering career opportunities and financial rewards. As a result, the development of sports facilities in rural and semi-urban areas has gained importance, with playgrounds and infrastructure being established to promote participation. Various sports organizations are also contributing to this effort.

Historically, sports have been part of human culture, originating from our desire for healthy entertainment and self-competition. Ancient civilizations, such as the Egyptians and Mayans, played games, and today sports like football, hockey, and rugby are celebrated globally. However, in recent times, younger generations have shifted toward the digital world, missing out on the fun and life lessons that come from physical play.

Physical fitness, which is essential for good health, encompasses strength, endurance, flexibility, and skill, all of which are achieved through regular exercise, proper rest, and a balanced diet. Regular, vigorous activity, such as jogging, cycling, or using gym equipment, strengthens the heart and reduces the risk of heart disease, stroke, and other conditions. It also builds strong muscles, bones, and flexibility,

helping prevent conditions like osteoporosis. Exercise benefits mental health as well, reducing stress, improving sleep, and increasing overall energy.

Despite these benefits, surveys show that many people remain inactive, in contrast to athletes who engage in regular physical activity. One of the greatest advantages of being active is the reduced risk of developing or dying from serious illnesses, including heart disease, colon cancer, high blood pressure, and diabetes. Physical activity promotes healthy bones, joints, and muscles and reduces the risk of premature death.

Beyond the health benefits, physical activity and sports improve cardiovascular fitness, muscle strength, energy levels, and overall quality of life. Physical education plays a vital role in individual fulfillment, health, and community development. In recent years, sports methodologies have evolved, with a focus on movement patterns rather than brute strength. This approach, based on the pattern recognition theory of motor learning, improves athletes' performance by strengthening their brain’s ability to remember and execute complex movements.

Sports are not only about staying healthy but also about learning valuable life lessons such as discipline, responsibility, teamwork, and self-confidence. Research has shown that physical activity increases blood flow to the brain, improving concentration, memory, creativity, and problem-solving skills. On a social level, sports bring people together, fostering connections and a sense of community. They also provide an excellent way to relieve stress and anxiety, with health professionals recommending physical activity as part of any stress management plan.

While many students avoid sports due to laziness or low energy, research shows that exercise actually increases energy levels. By pumping more oxygen through the bloodstream, playing sports revitalizes the body and helps manage busy schedules more efficiently. In summary, sports offer numerous benefits beyond just fun. They help you perform better in daily life, relieve stress, improve teamwork, and boost energy, all of which contribute to a balanced and fulfilling life.

1.2 STATEMENT OF THE PROBLEM

The purpose of the study is to assess the available infrastructure facilities and its influence on sports achievements of Karnataka and Kerala state universities.

1.3 SIGNIFICANCE OF THE STUDY

The sports infrastructure facilities seem to play a vital role in the overall performance of the sportsperson. The physical fitness and physical performance are necessary for developing health as well as confidence in today's competition at all levels. Moreover, nobody can take good health, physical fitness and excellence for granted. Ensuring a successful sports life demands regular participation in exercise together with proper diet, adequate relaxation and judicious health practices. When good health and fitness are achieved, the person's physical and mental wellbeing are possible. This study was carried out to determine the role of sports infrastructure facilities in the performance of university players in various competitive at south zone, All India Inter University competition and inter collegiate competition in various sports and games.

1.4 OBJECTIVES OF THE STUDY

1. To assess the sports infrastructure facilities provided by selected the universities in Karnataka and Kerala over the past five years and their contribution to the performance of sportspersons.
2. To analyze the sports achievements of Karnataka and Kerala state universities over the past five years.
3. To evaluate the contributions of the top five colleges in Karnataka and Kerala to the sports achievements of their selected universities.
4. To compare the sports performance and infrastructure facilities of selected universities in Karnataka and Kerala and identify the major contributions made by the top four selected universities.
5. To explore the interrelationship between the location, nature of sports facilities, and sports achievements in universities of Karnataka and Kerala.
6. To examine the association between the profiles of Physical Education Director and Directors of Physical Education in selected colleges and universities of Karnataka and Kerala.

7. To analyze the financial budget and infrastructure allocated to selected colleges and universities.

1.5 HYPOTHESIS OF THE STUDY

1. There is a **significant** association between the location, nature of the college, and gender, with the staff supported in selected colleges of Karnataka and Kerala states.
2. There is a **significant** association between the location, nature and status of the college, and gender, with the infrastructure facilities in selected colleges of Karnataka and Kerala states.
3. There is a **significant** association between the presence of athletic tracks and demographic parameters in selected colleges of Karnataka and Kerala states.
4. There is a **significant** association between coaching ratings and demographic parameters in selected colleges of Karnataka and Kerala states.
5. There is a **significant** difference in the receipt of financial assistance among demographic profiles of the selected colleges in Karnataka and Kerala states.
6. There is a **significant** association between income and expenditure in selected colleges of Karnataka and Kerala states.
7. There is statistic **significant** relationship between financial assistance and infrastructure facilities in the selected colleges of Karnataka and Kerala states.
8. Financial assistance has **significant** influence on Infrastructure facilities in the selected colleges of Karnataka and Kerala states.
9. Financial assistance and infrastructure facilities have **significant** influence on the sports achievements in the selected colleges of Karnataka and Kerala states.
10. There is a **significant** difference in the receipt of financial assistance among demographic profiles in the selected universities of Karnataka and Kerala states.
11. Infrastructure facilities **significantly** influence the sports achievements in the selected universities of Karnataka and Kerala states.
12. Coaching **significantly** influences the sports achievements in the selected universities of Karnataka and Kerala states.
13. There is **significant** difference between the infrastructure facilities, sports support, sports achievements and coaching, in the universities of Karnataka and Kerala states.

14. Financial assistance **significantly** influences the infrastructure facilities in the selected universities of Karnataka and Kerala states.
15. There is a **significant** association between income and expenditure in the selected universities of Karnataka and Kerala states.
16. Infrastructure facilities, sports support and coaching/training have a **significant** influence on the student's sports achievements at selected universities in Karnataka and Kerala states.

1.6 DELIMITATIONS OF THE STUDY

The study is delimited to the following states and universities:

1. Karnataka state selected Universities– University of Mysore, Mangalore University, Kuvempu University and Bangalore University.
2. Kerala state selected Universities– Kannur University, University of Calicut, University of Kerala and Mahatma Gandhi University**.**
3. The study is delimited to the universities in Karnataka and Kerala states, selected on the basis of sports performance of the university in the south zone/All India Inter-University competitions.
4. The study is delimited to the 2014-15 to 2018-19 data pertaining to sports performance of respective universities.
5. The study is further delimited to the top 5 selected sports achievement institutions/colleges of concerned universities of Karnataka and Kerala, on the basis of five-year (2014-15 to 2018-19) achievement at the university level.

1.7 LIMITATIONS OF THE STUDY

1. The psychological factors of athletes such as motivation, interest and passion were the limitations of the study.
2. The economic conditions of the athletes and their family are not considered in this study.
3. The study is limited to the academic calendar of the universities of Karnataka and Kerala states.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature is instrumental in the formation of hypothesis and deductive reasoning to the problem. A study of relevant literature is an essential step to get a full picture of what was done with regard to the problem under study. Such a review brings about a deep and clear perspective of the overall research work. The literature in any field forms the foundation, upon which all future work will be built. Nowadays the educational programs of any type are characterized by reforms and innovative ideas. We can arrive at deep insight and develop clear perspective of the overall areas in such reviews. Such collected reviews have been presented in a logical order of importance and sequence of merit.

Cherry Frame Lumingkewas and Indrajit (2022) the study sought to determine the correlation between students' perceptions of on-campus sports facilities. Data was collected through a survey of 355 students at Universities Klabat. A chi-square descriptive analysis in SPSS was used to analyze the correlation between the independent variables and the dependent variable. The dependent variable was student perception of sports facilities, categorized by age, hobbies, status, gender, academic level, and faculty. The findings revealed that most students were neither fully satisfied nor highly disappointed with the sports facilities at Universities Klabat. However, the majority agreed upon the need for renovations in the campus sports facilities.

In the study titled ‘Evaluation of the Management Function of Sports Facilities during the COVID-19 Pandemic’by Ahmad Nasrulloh et al. (2022), a descriptive-evaluative approach and the CIPP evaluation model (Context, Input, Process, and Product) were employed. Data was collected through observations and interviews with stakeholders, leaders, and sports facility unit managers at the Faculty of Sports Science, Yogyakarta State University, to assess the management of sports facilities. Data analysis was carried out through three concurrent stages: data reduction, data presentation, and conclusion drawing.

The study found that hindrance in appropriate regulation was due to limited staff and restricted service hours, which led to challenges such as difficulties in

scheduling staff, completing tasks that couldn't be done remotely, delays in communication, lack of educationregarding health protocols, and funding issues. To address these challenges, the staff were organized according to their skills, work schedules were created, and service to users was maintained while adhering to health protocols and government regulations. The pandemic led to a decline in user interest, negatively affecting revenue. The study recommended optimizing the use of sports facilities and infrastructure, evaluating programs, preparing strategies to attract clients, promoting and publicizing services, and developing an Android-based integrated service system to improve revenue.

In the work of D. Liberato et al. (2021) titled 'The Role of Sports Tourism Infrastructures and Sports Events in Destination Competitiveness,' two key areas that have recently become highly relevant to Oporto have been explored: sports and tourism. This is done by analyzing two underexplored infrastructures critical to the city: the Dragão Stadium and the FC Porto Museum. This research aims to contribute to the scientific literature on sports tourism by exploring the relationship between FC Porto and Oporto as a tourism destination, with a focus on developing future strategies for collaboration and strengthening partnerships to enhance competitiveness for both. A quantitative methodology was used, employing a questionnaire administered to 400 tourists and visitors in Oporto. The findings reveal that the tourists attending a football game at Dragão Stadium will follow up with a visit to FC Porto Museum resulting in dual benefit.

CHAPTER III
METHODOLOGY

This chapter elaborates the research method, procedure and the ways in which the study was conducted. The study focuses on assessing the available infrastructure facilities and its influence on sports achievement of Karnataka and Kerala state universities. The chapter consists of the selection of top performing Universities and Colleges, research variables and statistical analyses.

Researchers were established self-prepared questionnaire with the relevant abstract and references were used to frame questionnaire.

- In this study, the questionnaire technique was used for the collection of data.
- The questionnaire is prepared by survey strategy.
- The questions are simple, brief, in easily understandable language, and few in number.
- The questions are free from ambiguity, easily intelligible and readily answerable.
- Total care has been taken to see that the purpose of the question is clear enough to be understood by the subject.

The self-prepared questionnaires by the investigator have been sent to the experts and coaches in the field of physical education and sports. Their valuable opinion has been considered and the questionnaire has been finalized. Further, the questionnaire was standardized through pilot study.

3.1 Collection of Data

The investigator has approached various Directors of Physical Education in selected Universities and Physical Education Directors of colleges in Karnataka and Kerala. The standard questionnaire was used for comparative study on the available infrastructure facilities and its influence on sports achievement of Karnataka and Kerala state universities and top five colleges with major sports accomplishments of selected universities.

3.2 Method

The questionnaire technique was employed to collect the necessary data from the Director of physical education of different universities of Karnataka and Kerala and physical education directors of different colleges under the universities of Karnataka and Kerala. Research scholars were personally visited in different universities and colleges and discussions were held with various directors of physical education and physical education directors.

3.3 Administration of Questionnaire

The questionnaires were distributed to top four universities of Director of Physical Education and top twenty colleges of Physical Education Director of Karnataka and Kerala states with request to give correct and accurate response. The investigator himself has visited and collected the filled questionnaires. Before giving the questionnaire, the investigator explained about the importance of research work and elaborated on the proper filling of the questionnaire.

3.4 Infrastructure facilities

Infrastructure facilities are indispensable for efficient organisation and development of sports. The extent to which the facilities and sports infrastructure facilities are developed in selected universities and under the colleges, serve as one of the indices of sports infrastructure facilities and its influence on sports achievement of Karnataka and Kerala state universities. A survey on the total infrastructure facilities and sports achievements has been conducted in selected universities and meritorious institutions under the respective universities.

3.5 Sports Achievement

The literal meaning of sports achievement refers to the act of performing, executing, and accomplishing a task. It signifies an outstanding action or accomplishment by an individual, team, institution, or community that is recognized through a series of sports activities and often results in awards. Winning is associated with the concept of excellence, which is demonstrated by defeating comparable opponents. This excellence is a direct outcome of the motivational and logistical support provided by universities.

Thus, in this research, separate questionnaires for directors of physical education and physical education directors were designed to elicit information pertaining to the following areas:

1. Colleges and Universities profile.
2. Profile for Director of Physical Education and Physical Education Director.
3. Staff profile of colleges and University Departments of Physical Education.
4. Sports infrastructure facilities in colleges and universities.
5. Coaching and training in colleges and universities.
6. Finance assistance in colleges and universities.
7. Sports achievement in colleges and universities.

3.6 Statistical Analysis

The data received from each of the four responding universities of Karnataka and Kerala states and twenty colleges each of Karnataka and Kerala were converted into percentage. For the purpose of analyses and interpretation of the findings, graphs and figures were used. Also, descriptive statistics such as percentages, mean, standard deviations were computed. Various hypotheses were tested using Pearson Correlation test, Chi-Square test and ANOVA test. Further, structural equation modelling was used to analyse the relationship between the variables.

CHAPTER IV
ANALYSIS AND INTERPRETATIONS OF THE DATA

The purpose of this research is to study the sports infrastructure facilities and its influence on sports achievements in Karnataka and Kerala states. To achieve these objectives, survey through questionnaire was employed and the data were collected upon personal visitation. In addition to this, the investigator gathered information through personal observation and questioning. The filled questionnaires and responses to different questions were fed into a computer program for a systematic organization of data in electronic media.

The tabulated data was subjected to computation using the software SPSS 28 version. Further, the percentile was calculated from the results obtained. The data thus computed has been systematically arranged in a number of tables for the purpose of analysis and interpretation.

The data obtained and computed was for the following purpose:

- To know the sports profile of colleges in Karnataka and Kerala states.
- Department of Physical Education profile is respective universities of Karnataka and Kerala States.

The structure of an institution or a department plays an important role in creating foundation for a meaningful and supportive atmosphere for conducting various programs in physical education and sports. The following information was collected:

1. Profile of colleges and universities.
2. Profile of Director of Physical Education and Physical Education Director.
3. Staff profile of college and university departments of physical education.
4. Sports infrastructure facilities in colleges and universities.
5. Coaching and training in colleges and universities.
6. Finance assistance in colleges and universities.
7. Sports achievement in colleges and universities.

4.1 College Profile

The present study has been conducted by taking colleges of Karnataka and Kerala into consideration. A comparative analysis carried out between the two states and profiles of the colleges are discussed in this chapter.

Table 4.1 Status of First Grade Colleges in Karnataka and Kerala states.

State	Status	Frequency	Percentage (%)
Karnataka	Govt.	8	40
	Private	4	20
	Aided	8	40
	Total	**20**	**100**
Kerala	Govt.	2	10
	Private	0	0
	Aided	18	90
	Total	**20**	**100**

Table 4.1 indicates the status of first grade colleges and it showed that 40% of the colleges are run by the government in Karnataka with 40% being aided and only 20% are private colleges. In Kerala, 90% of colleges are aided with only 10%government colleges. Thus, the analysis states that majority of colleges in Kerala are aided whereas in Karnataka, the number of government and aided colleges are equal.

Table 4.2 Location of First Grade Colleges in Karnataka and Kerala states.

State	Location	Frequency	Percentage (%)
Karnataka	Urban	16	80
	Rural	4	20
	Total	**20**	**100**
Kerala	Urban	14	70
	Rural	6	30
	Total	**20**	**100**

Table 4.2 shows the location of colleges and it indicates that 80% of the colleges in Karnataka are in urban area and 20% in rural area. Whereas in Kerala, 70% of the colleges are in urban area with 30% in rural area. The analysis shows that colleges in Karnataka have wide recognition in urban areas than the colleges of Kerala.

Table 4.3 Nature of the Colleges in Karnataka and Kerala states.

State	Nature	Frequency	Percentage (%)
Karnataka	Boys	1	5
	Girls	5	25
	Co-education	14	70
	Total	**20**	**100**
Kerala	Boys	0	0
	Girls	3	15
	Co-education	17	85
	Total	**20**	**100**

Table 4.3 shows that 70% of the colleges in Karnataka are co-education and 25% are for girls only and 5% are meant for boys only. In Kerala, 85% of the colleges are co-education and 15% of the colleges are only for girls. The analysis shows that Kerala has more co-education colleges (85%) compared of Karnataka (70%). This indicates a greater prevalence of co-educational institutions in Kerala. It is true that large numbers of sportspersons are attracted to regular coaching and practice session.

Table 4.4 Student strength in First Grade Colleges of Karnataka and Kerala states.

State	Student strength	Frequency	Percentage (%)
Karnataka	Less than 1500	3	15
	1501-2000	11	55
	2001-2500	5	25
	Above 2500	1	5
	Total	**20**	**100**
Kerala	Less than 1500	1	5
	1501-2000	8	40
	2001-2500	9	45
	Above 2500	2	10
	Total	**20**	**100**

Table 4.4 shows that 55% of the colleges in Karnataka have student strength between 1501-2000 which is majority, whereas in Kerala, 45% (majority) of the colleges have student strength between 2001-2500.Only 5% of the colleges in

Karnataka have strength above 2500 but 10% of the colleges in Kerala have strength greater than 2500. From this analysis it can be inferred that, on an average, colleges in Kerala tend to have higher student strength compared to colleges in Karnataka.

Table 4.5 Establishment of Colleges in Karnataka and Kerala states.

State	Establishment	Frequency	Percentage (%)
Karnataka	Before 1850	0	0
	1851-1900	2	10
	1901-1950	3	15
	After 1951	15	75
	Total	**20**	**100**
Kerala	Before 1850	1	5
	1851-1900	2	10
	1901-1950	12	60
	After 1951	5	25
	Total	**20**	**100**

Table 4.5 shows the year of establishment and it indicates that 75% of the colleges in Karnataka started after 1951 but 60% of the colleges in Kerala were established during 1901-1950. This analysis states that the colleges in Kerala are much older than colleges in Karnataka. Implementation of a right assisted in establishing well developed sports ‘infrastructure’ in Kerala state colleges. It follows that the colleges established early are updating their infrastructure and sports facilities as per the necessity and utilization by the sports persons.

4.2 Profile of Physical Education Director

The investigator gathered detailed profiles of the physical education directors in respective colleges of Karnataka and Kerala states which are discussed in this section.

Table 4.6 Tenure of Service by the Physical Education Directors in the Colleges of Karnataka and Kerala states.

State	Service	Frequency	Percentage (%)
Karnataka	Less than 10 years	7	35
	11-20	9	45
	21-30	2	10
	More than 31 years	2	10
	Total	**20**	**100**
Kerala	Less than 10 years	7	35
	11-20	11	55
	21-30	2	10
	More than 31 years	0	0
	Total	**20**	**100**

Table 4.6 shows the tenure of service by the physical education directors in the colleges of Karnataka and Kerala and it indicates that 45% of the physical education directors in Karnataka have 11-20 years of service, and 35% have less than 10 years of service. In contrast, in Kerala, 55% of the physical education directors have 11 to 20 years of service and 35% have less than 10 years of service. This shows an additional 11 to 20 years of average service in Kerala. In Karnataka, 10% of physical education directors have more than 31 years of service. From the analysis, it can be concluded that colleges in Karnataka have more experienced physical education directors than those in Kerala. Experience benefits were added to their respective colleges to get positive results in competitions.

Table 4.7 Gender of the Physical Education Directors working in colleges of Karnataka and Kerala states.

State	Gender	Frequency	Percentage (%)
Karnataka	Male	16	80
	Female	4	20
	Total	**20**	**100**
Kerala	Male	13	65
	Female	7	35
	Total	**20**	**100**

Table 4.7 shows the gender of the physical education directors. The majority of physical education directors, which is 80%, is male in Karnataka with 65% in Kerala being male. Thus, the male majority of the physical education directors in Karnataka is15% more compared to Kerala state colleges.

Table 4.8 Nature of appointment of Physical Education Directors in Karnataka and Kerala state Colleges.

State	Nature of Job	Frequency	Percentage (%)
Karnataka	Temporary	5	25
	Permanent	15	75
	Total	**20**	**100**
Kerala	Temporary	3	15
	Permanent	17	85
	Total	**20**	**100**

Table 4.8 shows the nature of job indicating that 75% of physical education directors in Karnataka are in permanent position in comparison with 85% in Kerala. Therefore, this analysis sheds light on the fact that a greater number of physical education directors are permanent employees in Kerala. This could be a contributing factor to a growing number of sports persons at the college level itself.

Table 4.9 Professional Qualifications of Physical Education Directors in Colleges of Karnataka and Kerala states.

State	Course		Responses		
			N=20	Percentage (%)	Percentage of Cases (%)
Karnataka	Professional Qualification	B.P.Ed.	20	37.04	100
		M.P.Ed.	20	37.04	100
		NIS(Diploma)	2	3.7	10
		NIS (Certificate course)	0	0	0
		M.Phil.	4	7.41	20
		Ph.D.	8	14.81	40
	Total		**51**	**100**	**255**
Kerala	Professional Qualification	B.P.Ed.	17	29.8	85
		M.P.Ed.	20	35.1	100
		NIS(Diploma)	4	7.0	20
		NIS (Certificate course)	1	1.8	5
		M.Phil.	8	14.0	40
		Ph.D.	7	12.3	35
	Total		**57**	**100**	**285**

Table 4.9 shows the professional qualifications of the physical education directors. Here, the respondents opted for more than one option. The above table indicates that all the physical education directors in Karnataka have B.P.Ed. and M.P.Ed. qualifications. In Kerala state, all the physical education directors have M.P.Ed. and 85% of the physical education directors have B.P.Ed. qualification. It is deduced that 15% of the physical education directors have done directly M.P.Ed. without B.P.Ed. In Karnataka, 10% of the physical education directors have done NIS (diploma), 20% have completed M.Phil. and 40% have done research and been awarded Ph.D. in Physical Education. In Kerala, 20% of physical education directors have done NIS (diploma), 5% have done NIS certificate course, 40% have completed M.Phil., and 35% have done research and been awarded Ph.D. in Physical Education. Hence, the analysis shows that 100% of the physical education directors have M.P.Ed. qualification in both the states with specialization in a particular game more in Kerala than Karnataka. The physical education directors who have obtained Ph.D. may later seek guiedship from a university and help a student's academic career.

4.3 Physical Education Department Profile of Colleges

The investigator collected the details of the profiles of the physical education department as discussed in this section.

Table 4.10 Independent departments of Sports and Physical Education Director.

State	Availability	Frequency	Percentage (%)
Karnataka	Yes	16	80
	No	4	20
	Total	**20**	**100**
Kerala	Yes	20	100
	No	0	0
	Total	**20**	**100**

Table 4.10 shows the details of having separate sports department and it indicates that 80% of the colleges in Karnataka have separate sports department and 20% do not. On the contrary, in Kerala, 100% of the colleges have a separate sports department. From the analysis, it can be concluded that colleges of Kerala have given more importance to sports by establishing independent sports department in all the

colleges when compared to Karnataka. It is suggested to establish infrastructure and provide sports material for practice alongside coaching sports persons. This shall encourage a greater number of students to enter the field of sports.

Table 4.11 Staff in the colleges of Karnataka and Kerala states.

State	Availability	Frequency	Percentage (%)
Karnataka	No	9	45
	Yes	11	55
	Total	**20**	**100**
Kerala	No	10	50
	Yes	10	50
	Total	**20**	**100**

Table 4.11 shows the details of clerical and ground staff of the colleges of both the states. The result shows that 55% of the colleges in Karnataka and 50% of the colleges in Kerala have clerical and ground staff. From the analysis it can be concluded that both the states have given less importance to the ground and clerical staff. It might be due to policy issues that the colleges were not given opportunities. A proportional number of staff members must be appointed as per the available sports infrastructure.

Table 4.12 Support of staff members in the Colleges of Karnataka and Kerala states.

State	Support offered	Frequency	Percentage (%)
Karnataka	No	2	10
	Yes	18	90
	Total	**20**	**100**
Kerala	No	1	5
	Yes	19	95
	Total	**20**	**100**

Table 4.12 gives the details as to what extent the colleges support sports activities. 90% of the colleges provide support for sports in Karnataka with 95% in Kerala. From the analysis, it can be concluded that colleges in both the states support sports significantly.

Table 4.13 Sports promotion programs in colleges of Karnataka and Kerala states.

State			Responses N=20	Percentage (%)	Percentage of Cases (%)
Karnataka	Support Details	Grace mark	10	13.2	50
		Sports person disabilities	5	6.6	25
		Folk games	7	9.2	35
		Insurance	5	6.6	25
		Holiday camp	13	17.1	65
		Staff tournament	18	52.6	90
		Rural women sports	6	7.9	30
		Traditional games	12	15.8	60
Total			**76**	**100**	**380**
Kerala	Support Details	Grace mark	20	18.9	100
		Sports person disabilities	15	14.2	75
		Folk games	4	3.8	20
		Insurance	7	6.6	35
		Holiday camp	19	17.9	95
		Staff tournament	17	61.3	85
		Rural women sports	14	13.2	70
		Traditional games	10	9.4	50
Total			**106**	**100**	**530**

a. Dichotomy group tabulated at value 1.

Table 4.13 shows the details of sports promotion programs provided in colleges of both the states and it explains that 90% of the colleges in Karnataka conduct staff tournament and 65% of the colleges provide holiday camp. Also, 60% of the colleges in Karnataka conduct traditional games and only 25% of the colleges support sports promotion programs for people with disabilities and insurance. On the other side, all colleges in Kerala give 100% grace marks to the sports students and 75% of the colleges support sports persons with disabilities. It also indicates that 95% of the colleges in Kerala provide holiday camp and 85% of the colleges conduct staff tournaments. From the comparative analysis, it can be concluded that Kerala colleges

provide more support to sports in all aspects in terms of promotion programs as well as competitive sports events. This might be the reason that sports persons of Kerala are getting more opportunities than of Karnataka.

4.4 Sports infrastructure facilities

The investigator collected details about the sports infrastructure facilities in the colleges of Karnataka and Kerala. The results are discussed as follows.

Table 4.14 Sports infrastructure facilities in the Colleges of Karnataka and Kerala states.

State	Availability	Frequency	Percentage (%)
Karnataka	No	2	10
	Yes	18	90
	Total	**20**	**100**
Kerala	No	0	0
	Yes	20	100
	Total	**20**	**100**

Table 4.14 shows the sports facilities in colleges and indicates that90% of the colleges in Karnataka have sports facilities and the remaining 10% do not have proper facilities. In Kerala, 100% of the colleges have sports infrastructure facilities. It can be summarized that colleges in Kerala provide better sports infrastructure facilities than the colleges in Karnataka.

Table 4.15 Modernized sports facilities available in the Colleges of Karnataka and Kerala states.

State	Modernized sports facilities		N=20	Responses Percentage (%)	Percentage of Cases (%)
Karnataka	Details of Infrastructure facility	Fitness Centre	14	22.2	70
		Indoor	12	19	60
		Outdoor	17	27	85
		Training and Coaching	14	22.2	70
		Technology	6	9.5	30
Total			**63**	**100**	**315**
Kerala	Details of Infrastructure facility	Fitness Centre	20	26.3	100
		Indoor	10	13.2	50
		Outdoor	17	22.4	85
		Training and Coaching	19	25	95
		Technology	10	13.2	50
Total			**76**	**100**	**380**

a. Dichotomy group tabulated at value 1.

Table 4.15 shows the details of sports facilities available in the colleges of both states. It is revealed that in Karnataka, 70% of the colleges have fitness centers with training and coaching facility. Further, 60% of the colleges in Karnataka have indoor game facilities and 85% of the colleges have outdoor game facilities with 30% of the colleges having advance technology. But in Kerala,100% of the colleges have fitness centers. 50% of the colleges have indoor game facilities and 85% of the colleges have outdoor game facilities. Further, it is seen that 95% of the colleges in Kerala have proper training and coaching facility with 50% of the colleges having advance technology. While analyzing the total number of facilities, it can be concluded that Kerala colleges have a greater number of sports facilities than those in Karnataka. This results in better performance of the sports persons in various games, reflected in

highest positions secured at national level competitions by the students of Kerala colleges.

Table 4.16 Outdoor sports facilities available in the Colleges of Karnataka and Kerala states.

State	Outdoor Sports facilities	Responses		Percentage of Cases (%)
		N=20	Percentage (%)	
Karnataka	Hockey	8	6.2	40
	Kabaddi	14	10.9	70
	Cricket Pitch	11	8.6	55
	Football	11	8.6	55
	Kho-Kho	11	8.6	55
	Ball Badminton	12	9.4	60
	Volleyball	14	10.9	70
	Basketball	9	7	45
	Handball	11	8.6	55
	Tennis	6	4.7	30
	Throw Ball	14	10.9	70
	Archery	2	1.6	10
	Netball	5	3.9	25
Total		**128**	**100**	**640**
Kerala	Hockey	10	7.4	50
	Kabaddi	13	9.6	65
	Cricket Pitch	17	12.5	85
	Football	17	12.5	85
	Kho-Kho	8	5.9	40
	Ball Badminton	7	5.1	35
	Volleyball	20	14.7	100
	Basketball	20	14.7	100
	Handball	9	6.6	45
	Tennis	1	0.7	5
	Throw Ball	8	5.9	40
	Archery	1	0.7	5
	Netball	5	3.7	25
Total		**136**	**100**	**680**

a. Dichotomy group tabulated at value 1.

Table 4.16 shows the outdoor game facilities available in colleges. In Karnataka, 70% of the colleges have facilities for kabaddi, volleyball and throwball, 70% and 55% of the colleges have cricket pitch, football, handball and kho-kho. It is also observed that only 25% of the colleges have netball and 10% have archery. On the other hand, all the colleges in Kerala have 100% volleyball and basketball, 85% have cricket pitch and football, and 5% of the colleges have tennis ground. It also showed that 65% of the colleges have kabaddi and 40% have kho-kho and throwball. Thus, from the analysis, it can be concluded that both the states have comparable outdoor game facilities though a bit broader, as there exist variations in certain sports facilities. More number assessment would consider and their prevalence in each state.

***Table 4.17 Indoor sports facilities available in the Colleges of Karnataka and Kerala states*.**

State	Indoor Sports facilities	Responses N=20	Responses Percentage (%)	Percentage of Cases (%)
Karnataka	Badminton	8	15.1	40
	Volleyball	3	5.7	15
	Kabaddi	6	11.3	30
	Chess	12	22.6	60
	Wrestling	6	11.3	30
	Basketball	2	3.8	10
	Multi Gym	13	24.5	65
	Handball	1	1.9	5
	Netball	2	3.8	10
Total		**53**	**100**	**265**
Kerala	Badminton	13	19.4	65
	Volleyball	10	14.9	50
	Kabaddi	1	1.5	5
	Chess	10	14.9	50
	Wrestling	5	7.5	25
	Basketball	10	14.9	50
	Multi Gym	15	22.4	75
	Handball	1	1.5	5
	Netball	2	3	10
Total		**67**	**100**	**335**

a. Dichotomy group tabulated at value 1.

Table 4.17 shows the indoor game facilities available in the colleges and it indicated that 65% of the colleges in Karnataka have multi-gym and 60% have chess. Only 5% of the colleges have handball and 30% have kabaddi and wrestling. On the other hand, 65% of the colleges in Kerala have badminton facilities and 50% have volleyball, chess and basketball. Only 5% of the colleges have handball facilities and 10% have netball. From the analysis, it can be concluded that the indoor game facilities vary among colleges predominantly featuring multi-gyms and chess but Kerala colleges exhibit a higher prevalence of badminton and basketball facilities. In conclusion, there are notable differences in the indoor sports facilities offered by colleges in Karnataka and Kerala states.

Table 4.18 Athletic Track in the colleges of Karnataka and Kerala states.

State	Availability	Frequency	Percentage (%)
Karnataka	No	3	15
	Yes	17	85
Total		**20**	**100**
Kerala	No	3	15
	Yes	17	85
Total		**20**	**100**

In Table 4.18, the data indicates that both Karnataka and Kerala have an equal percentage (85%) of colleges with athletic tracks. There is not much of a difference between the two states in this regard. Further, the above results show that there is support from the government towards development of athletic facilities in colleges of both states.

Table 4.19 Particular track facilities available in the colleges of Karnataka and Kerala states.

State	Athletic Track	Standard		Non-standard	
		N=20	Percentage (%)	N=20	Percentage (%)
Karnataka	Synthetic	1	5	0	0
	Cinder	1	5	0	0
	Mud	14	70	6	30
Kerala	Synthetic	1	5	5	25
	Cinder	0	0	0	0
	Mud	11	55	9	45

Table 4.19 gives the athletic track facilities available in the colleges of Karnataka and Kerala states. In Karnataka, 5% of the colleges have synthetic standard (400mtr) track facilities. The majority of the colleges have standard track facilities and 15% of the colleges do not have tracks. However, these colleges have provided at least basic facilities, either cinder or mud track to their students. The table shows that colleges in both Karnataka and Kerala have a combination of synthetic, cinder and mud track facilities in their campus.

In Kerala, 75% of the colleges have synthetic standard (400mtr) track facilities. It shows that majority of the colleges have synthetic standard track facilities and 25% of the colleges still do not have synthetic tracks. But all these colleges have provided a minimum facility which is cinder (100%) or mud track to their students. The above table also shows that 11 colleges are having both synthetic, cinder and mud track facilities in their campus.

It clearly states that the colleges in Karnataka have given more importance to the standard synthetic track facilities compared to the colleges of Kerala. From the analysis, it can be concluded that a greater emphasis is laid on the sporting infrastructure in Karnataka colleges regarding athletics. However, it is worth nothing that both the states ensure that all colleges, regardless of track facilities, offer minimum options, which are either cinder or mud tracks. Additionally, the colleges offering both synthetic and alternative track options underscore a commitment to accommodating various sporting needs. This analysis highlights the differing approaches to sports facility provision in colleges among Karnataka and Kerala.

Table 4.20 Available Swimming Pool in the Colleges of Karnataka and Kerala states.

State	Availability	Frequency	Percentage (%)
Karnataka	No	15	85
	Yes	5	15
	Total	**20**	**100**
Kerala	No	18	90
	Yes	2	10
	Total	**20**	**100**

Table 4.20 shows the presence of swimming pool in colleges. 85% of the colleges in Karnataka and 90% of the colleges in Kerala do not have a swimming pool. From the analysis, it can be concluded that colleges in both the states have given less importance to establish swimming pools. More financial assistance might be required to develop and maintain swimming infrastructure at the college level.

Table 4.21 Swimming Pool facility available in the Colleges of Karnataka and Kerala states.

State	Length of Swimming Pool	Indoor		Outdoor	
		N=20	Percentage (%)	N=20	Percentage (%)
Karnataka	50 meters	2	10	5	**25**
	25 meters	2	10	3	**15**
Kerala	50 meters	4	20	8	**40**
	25 meters	2	10	4	**20**

Table 4.21 shows the type of swimming pool facility available. In Karnataka, 10% of the colleges have 50meters and 25meters long indoor swimming pool with 25% of the colleges having outdoor swimming pool. On the other hand, 20% of the colleges in Kerala have 50 meters long indoor swimming pool and 40% have 50 meters outdoor swimming pool. From the analysis, it can be concluded that colleges of Kerala have more indoor and outdoor swimming pools than Karnataka. This is a possible reason for a greater number of swimmers from Kerala to participate in the final lap of national competitions.

4.5 Coaching and Training

The investigator requested the physical education directors to rate the coaching and training regimen of the colleges and the results are presented in this section.

Table 4.22Response of athletes towards coaching in the Colleges of Karnataka and Kerala states.

State	Response	Frequency	Percentage (%)	Mean	Standard Deviation
Karnataka	Average	3	15	4.44	0.705
	Good	7	35		
	Excellent	10	50		
	Total	**20**	**100**		
Kerala	Average	2	10	4.15	0.587
	Good	13	65		
	Excellent	5	25		
	Total	**20**	**100**		

*No respondent has chosen the option such as below average or poor. Hence the table is constructed for only three options.

Table 4.22 shows the rating towards coaching in the colleges. It shows that 65% of the physical education directors of Kerala were rated as good and 25% of the physical education directors have been rated excellent. The overall mean and standard deviation are 4.15 and 0.587, respectively, which shows that physical education directors of Kerala are rated high regarding coaching. In Karnataka, 50% of the physical education directors were rated as excellent and 35% of the physical education directors have been rated as good towards coaching. The overall mean and standard deviation for Karnataka are 4.44±0.705 and Kerala 4.15±0.587, respectively. Coaching plays a key role in perfecting the technique and skills of the sportspersons in every game. Also, it provides guidance, the required motivation and moral support to the athlete.

4.6 Financial Assistance: Income

Table 4.23 Preparation of budget for Physical Education and Sports in the Colleges of Karnataka and Kerala states.

State	Income	2014-15		2015-16		2016-17		2017-18		2018-19	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Karnataka	Grants from the govt.	3	17	1	19	1	19	2	18	1	19
	Grants from university	3	17	4	16	4	16	4	16	4	16
	Contribution from the college management	7	13	7	13	7	13	7	13	7	13
	Donations	0	20	0	20	0	20	0	20	1	19
	Fee collected from the students	17	3	17	3	17	3	17	3	17	3
	Sponsorships	0	20	0	20	0	20	0	20	0	20
	Any other	1	19	1	19	1	19	1	19	1	19
Kerala	Grants from the govt.	10	10	11	9	9	11	9	11	9	11
	Grants from university	8	12	11	9	10	10	8	12	8	12
	Contribution from the college management	12	8	12	8	12	8	12	8	12	8
	Donations	7	13	8	12	8	12	8	12	8	12
	Fee collected from the students	20	0	20	0	20	0	20	0	20	0
	Sponsorships	9	11	9	11	9	11	9	11	9	11
	Any other	3	17	3	17	3	17	3	17	3	17

Table 4.24 Budget received by the Department of Physical Education and Sports in the Colleges of Karnataka and Kerala states.

State	Income	2014-15		2015-16		2016-17		2017-18		2018-19	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Karnataka	Grants from the govt.	15	85	5	85	5	85	10	90	5	95
	Grants from university	15	85	20	80	20	80	20	80	20	80
	Contribution from the college management	35	65	35	65	35	65	35	65	35	65
	Donations	0	100	0	100	0	100	0	100	5	95
	Fee collected from the students	85	15	85	15	85	15	85	15	85	15
	Sponsorships	0	100	0	100	0	100	0	100	0	100
	Any other	5	95	5	95	5	95	5	95	5	95
Kerala	Grants from the govt.	50	50	55	45	45	55	45	55	45	55
	Grants from university	40	60	55	45	50	50	40	60	40	60
	Contribution from the college management	60	40	60	40	60	40	60	40	60	40
	Donations	35	65	40	60	40	60	40	60	40	60
	Fee collected from the students	100	0	100	0	100	0	100	0	100	0
	Sponsorships	45	55	45	55	45	55	45	55	45	55
	Any other	15	85	15	85	15	85	15	85	15	85

Tables 4.23 and 4.24 revealed that 5% to 15% of the colleges in Karnataka received grants from the government. In Kerala, 45% to 55% of the colleges received grants from the government. Also, 15% to 20% of the colleges in Karnataka received grants from the university whereas 40% to 60% of the colleges in Kerala received grants from the university. Therefore, it is seen that a college in Kerala receives more grants from government and university than the colleges in Karnataka. Further, 35% to 65% of the colleges in Karnataka received contribution from the college management whereas 40% to 60% of the colleges received in Kerala. Interestingly, 35% to 40% colleges of Kerala have received donations for sports activities but no such donations were obtained in Karnataka.

In the case of fee collections from students, 85% colleges of Karnataka collected fee whereas all the 100% colleges of Kerala collected fees. In Kerala, 45% to 55% colleges received sponsorship but the colleges of Karnataka did not receive any Sponsership. The Financial Assistance from any other source in Karnataka is very less compared to colleges in Kerala. From the analysis, it can be concluded that the colleges of Kerala state have received more grants than the colleges of Karnataka.

Table 4.25 Percentage of expenditure budget for Department of Physical Education and Sports in the Colleges of Karnataka and Kerala states.

State	Expenditure	2014-15		2015-16		2016-17		2017-18		2018-19	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Karnataka	Purchase of equipment	19	1	20	0	18	2	19	1	18	2
	Intensive to achievers	13	7	13	7	13	7	13	7	13	7
	Maintenance of equipment & facilities	5	15	5	15	5	15	5	15	5	15
	TA & DA and sports jersey to player	19	1	19	1	19	1	19	1	19	1
	Honorariums to coaches	6	14	6	14	6	14	6	14	6	14
	Scholarship for students	6	14	6	14	6	14	6	14	7	14
	Miscellaneous expenses	4	16	4	16	4	16	4	16	4	16
	Any other	3	17	3	17	3	17	3	17	3	17
Kerala	Purchase of equipment	20	0	20	0	20	0	20	0	20	0
	Intensive to achievers	18	2	18	2	18	2	18	2	18	2
	Maintenance of equipment & facilities	11	9	11	9	11	9	11	9	11	9
	TA & DA and sports jersey to player	20	0	20	0	20	0	20	0	20	0
	Honorariums to coaches	13	7	13	7	13	7	13	7	13	7
	Scholarship for students	8	12	8	12	8	12	9	11	9	11
	Miscellaneous expenses	8	12	8	12	8	12	8	12	8	12
	Any other	1	19	1	19	1	19	1	19	1	19

Table 4.26 Expenditure budget in percentage for Physical Education and Sports in the Colleges of Karnataka and Kerala.

State	Expenditure	2014-15		2015-16		2016-17		2017-18		2018-19	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Karnataka	Purchase of equipment	95	5	100	0	90	10	95	5	90	10
	Incentive to achievers	65	35	65	35	65	35	65	35	65	35
	Maintenance of equipment & facilities	25	75	25	75	25	75	25	75	25	75
	TA & DA and sports jersey to player	95	5	95	5	95	5	95	5	95	5
	Honorariums to coaches	30	70	30	70	30	70	30	70	30	70
	Scholarship for students	30	70	30	70	30	70	30	70	35	70
	Miscellaneous expenses	20	80	20	80	20	80	20	80	20	80
	Any other	15	85	15	85	15	85	15	85	15	85
Kerala	Purchase of equipment	100	0	100	0	100	0	100	0	100	0
	Incentive to achievers	90	10	90	10	90	10	90	10	90	10
	Maintenance of equipment & facilities	55	45	55	45	55	45	55	45	55	45
	TA & DA and sports jersey to player	100	0	100	0	100	0	100	0	100	0
	Honorariums to coaches	65	35	65	35	65	35	65	35	65	35
	Scholarship for students	40	60	40	60	40	60	45	55	45	55
	Miscellaneous expenses	40	60	40	60	40	60	40	60	40	60
	Any other	5	95	5	95	5	95	5	95	5	95

Tables 4.25 and 4.26 show that 90% to 100% colleges in Karnataka spent money on the purchase of equipment every year. Around 65%of the colleges spent amount as incentives for achievers. Further, for 25% of the colleges, the expenses were for the maintenance of equipment and facilities. 95% of the colleges spent money for travelling allowance (TA), dearness allowance (DA) and sports jersey to players. Additional to this, the expenditure of 30% colleges was towards honorariums for coaches and scholarship for students. Also, 15% to 20% of the colleges had miscellaneous expenses.

In the case of colleges in Kerala, all the colleges spent the amount for purchase of equipment, TA and DA, and sports jersey to the players. Also, 90% of the colleges spent money as incentives for achievers, 65% colleges on honorariums for coaches and 55% colleges on maintenance of equipment and facilities. Further, 40% of the colleges spent the amount for scholarship for students and miscellaneous expenses. Only 5% of the colleges had miscellaneous expenditures. From the analysis, it can be concluded that the colleges of Kerala have greater expenditures favoring the development of sports in comparison with the colleges of Karnataka. Good budget aids to improve sports facilities in the college campus, helps provide quality equipment to the students. Further, qualified coaches can be invited to train the teams in the colleges. Colleges can conduct inter-collegiate or inter-university level tournaments, special coaching camps for students, and also organize state or national level conferences or workshops in the college campus.

4.7 Level of Sports Achievements

Table 4.27 Colleges of Karnataka State: Sports Achievements of the past 5 years.

Sl. No.	Game/Event	Sports Achievements										
		Men					Women					
		2014-15	2015-16	2016-17	2017-18	2018-19	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Athletics	105	109	114	118	121	125	85	98	105	112	1092
2	Archery	0	0	0	0	0	0	0	0	0	0	0
3	Badminton	6	6	9	7	9	8	8	8	8	9	78
4	Ball Badminton	4	3	4	4	4	4	6	8	6	4	47
5	Basketball	4	5	5	3	1	4	6	3	8	5	44
6	Chess	4	3	1	4	3	2	4	5	4	4	34
7	Cricket	6	7	6	10	6	3	3	3	4	7	55
8	Football	3	5	2	2	6	3	5	5	5	4	40
9	Gymnastic	14	13	18	18	19	2	7	7	3	2	103
10	Handball	6	9	5	6	4	6	10	6	6	8	66
11	Hockey	6	4	4	6	6	3	3	3	3	5	43
12	Kabaddi	5	4	4	4	7	8	7	8	6	7	60

13	Kho-Kho	7	5	5	6	8	6	6	4	6	5	58
14	Netball	9	7	8	9	8	9	7	6	7	8	78
15	Lifting	32	46	52	46	51	28	26	28	31	38	378
16	Softball	5	4	4	3	4	2	4	4	3	3	36
17	Swimming	18	16	14	16	12	9	16	12	11	15	139
18	Table Tennis	3	3	2	5	1	3	3	5	5	3	33
19	Tennis	7	7	6	4	5	4	2	4	2	4	45
20	Throwball	0	0	0	0	0	5	5	4	3	4	21
21	Volleyball	6	7	7	4	6	7	7	6	6	7	63
22	Wrestling	37	36	36	32	35	17	27	25	19	23	287
23	Yoga	3	1	2	2	4	3	1	2	7	5	30
24	Tug of war	2	4	5	5	7	5	6	5	7	8	54
25	Any other	0	0	0	0	0	0	0	0	0	0	0

Table 4.28 Colleges of Kerala State: Sports Achievement of the past 5 years.

Sl. No.	Game/Event	Sports Achievements										
		Men					Women					
		2014-15	2015-16	2016-17	2017-18	2018-19	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	Athletics	88	78	96	85	110	61	85	78	85	105	871
2	Archery	0	0	0	0	0	0	5	0	0	0	5
3	Badminton	10	10	10	4	5	15	20	20	10	10	114
4	Ball Badminton	5	10	10	10	10	10	10	10	10	10	95
5	Basketball	5	7	6	4	5	5	5	3	3	3	46
6	Chess	15	5	15	15	5	15	20	10	5	5	110
7	Cricket	5	4	5	7	5	1	3	4	6	2	42
8	Football	10	10	10	10	10	1	2	1	2	2	58
9	Gymnastic	15	20	25	25	14	8	9	11	13	10	150
10	Handball	10	10	10	10	10	5	0	0	0	0	55
11	Hockey	1	1	5	5	5	1	5	5	5	5	38
12	Kabaddi	1	1	2	2	2	2	6	8	7	6	37
13	Kho-Kho	10	2	3	9	8	2	1	2	3	1	41

14	Netball	0	0	0	0	0	0	0	0	0	0	0
15	Power Lifting	12	15	13	21	23	12	16	19	23	21	175
16	Softball	2	3	2	4	2	2	3	4	2	5	29
17	Swimming	16	15	14	15	18	21	17	20	31	35	202
18	Table Tennis	5	10	10	5	5	10	10	10	5	5	75
19	Tennis	4	6	5	4	2	2	3	1	2	2	31
20	Throwball	0	0	0	0	0	3	4	3	3	5	18
21	Volleyball	10	10	10	10	10	5	5	5	5	5	75
22	Wrestling	5	5	10	10	10	5	5	10	10	10	80
23	Yoga	5	5	5	5	5	5	5	5	5	5	50
24	Tug of war	5	9	10	8	9	4	8	6	9	7	75
25	Any other	0	0	0	0	0	0	0	0	0	0	0

Table 4.27 demonstrates the sports achievements of the selected colleges of Karnataka state in inter-collegiate level tournaments from 2014 to 2019. The table clearly shows that the achievement in sports has increased in these five years. In athletics, the selected colleges of Karnataka have secured increasing number of medals in both the men and women sections. The table shows that in the selected colleges, in gymnastics, hockey, kho-kho, netball, lifting, swimming and wrestling, male athletes have obtained more medals compared to women. Whereas in athletics, badminton, ball badminton, basketball, chess, cricket, football, handball, kabaddi, table tennis, volleyball, yoga and throwball events, the female players have secured more medals than men in intercollegiate level tournaments from 2014 to 2019. No achievements were recorded in both the men and women sections for archery in five years. The table also indicates that the selected colleges of Karnataka have scored more medals in individual events than team events.

The sports achievements of the selected colleges in Kerala at intercollegiate level tournaments from 2014 to 2019 are shown in Table 4.28. In these five years, an increasing number of medals has been achieved. It is observed that the men dominated in athletics, basketball, cricket, football, gymnastics, handball, kho-kho, and volleyball tournaments at the inter-collegiate level. But archery, badminton, ball badminton, hockey, kabaddi, lifting, softball, and swimming, were dominated by women.

Table 4.29 Chi-Square results on sports support and demographic parameters of location, nature and genders in the Colleges of Karnataka and Kerala states.

Demographic Parameter	Categories	Support Level			Total	Chi-Square Value	p-Value	Decision
		Low	Moderate	High				
Location	Urban	8	17	5	30	5.268	0.261	**Not significant**
	Rural	4	4	2	10			
	Total	**12**	**21**	**7**	**40**			
Nature	Boys	1	0	0	1	1.042	0.594	**Not significant**
	Girls	3	4	1	8			
	Co-Education	9	17	5	31			
	Total	**13**	**21**	**6**	**40**			
Gender	Male	10	14	5	29	2.573	0.276	**Not significant**
	Female	3	1	7	11			
	Total	**13**	**15**	**12**	**40**			

Table 4.29 shows association between the level of support and demographic parameters. Since the p-value for location parameter is 0.261, nature parameter 0.594 and gender parameter 0.276, respectively it is greater than 0.05, it indicates that there is **no significant** association between location, nature of education and gender with the level of sports support in both the states of Karnataka and Kerala.

Association between infrastructure facility and demographic parameters

The chi-square test was conducted in order to know the association between the infrastructure facility and demographic parameters and the results are depicted in Table 4.30.

Table 4.30 Chi-Square results on the infrastructure facility and demographic parameters in the Colleges of Karnataka and Kerala states.

State	Demographic Parameter	Categories	Having Infrastructure		Total	Chi-square Value	p-Value	Decision
			Yes	No				
Karnataka	Location	Urban	15	2	17	1.968	0.161	**Not significant**
		Rural	2	1	3			
		Total	**17**	**3**	**20**			
	Nature	Boys	0	1	1	11.11	0.04	**significant**
		Girls	4	1	5			
		Co-Education	14	0	14			
		Total	**18**	**2**	**20**			
	Status	Govt.	7	1	8	2.476	0.29	**Not significant**
		Private	3	1	4			
		Aided	8	0	8			
		Total	**18**	**2**	**20**			

Kerala	Location	Urban	14	0	14	1.968	0.161	**Not significant**
		Rural	6	0	6			
		Total	**20**	**0**	**20**			
	Nature	Boys	0	0	0	8.585	0.018	**significant**
		Girls	3	0	3			
		Co-Education	17	0	17			
		Total	**20**	**0**	**20**			
	Status	Govt.	2	0	2	1.944	0.378	**Not significant**
		Private	0	0	0			
		Aided	18	0	18			
		Total	**20**	**0**	**20**			

Table 4.30 shows that there is significant association between appropriate infrastructure and nature of the college in both the states ($p<0.05$). The co-education colleges have a greater number of infrastructure facilities than the other natured colleges. Even here, the p-value is greater than the calculated value. Further, it shows that there is **no significant** association between having infrastructure facilities and location, status of the colleges. In Karnataka, the location and status levels are greater than 0.05, that is 0.161 and 0.290. Hence, there is **no significant** difference. In the case of nature level, the p-value is 0.04 which is lesser than 0.05. Thus, there is a **significant** difference among them. In Kerala state, the location and status levels are greater than 0.05, that is 0.161 and 0.378. Hence **no significant** difference. In the case of nature level, the p-value is 0.018 which is lesser than 0.05. Thus, there is a **significant** difference among them. The infrastructure, sports facilities available in the colleges of both Karnataka and Kerala states are different with multiple variables.

Association between athletic tracks and demographic parameters

The chi-square test was conducted to understand the association between having athletic tracks and the corresponding demographic parameters. The results are as follows in Table 4.31.

Table 4.31 Chi-Square results on the association between athletic tracks and demographic parameters in the Colleges of Karnataka and Kerala states.

State	Demographic Parameter	Categories	Having Athletic Track		Total	Chi-square Value	p-Value	Decision
			Yes	No				
Karnataka	Location	Urban	12	3	15	0.499	0.669	**Not significant**
		Rural	2	3	5			
	Nature	Boys	0	0	0	3.47	0.043	**significant**
		Girls	2	2	4			
		Co-Education	15	1	16			
	Status	Govt.	1	1	2	0.729	0.284	**Not significant**
		Private	0	0	0			
		Aided	16	2	18			
Kerala	Location	Urban	12	2	14	0.19	0.891	**Not significant**
		Rural	5	1	6			
	Nature	Boys	0	0	0	1.064	0.596	**Not significant**
		Girls	3	0	3			
		Co-Education	14	3	17			
	Status	Govt.	6	1	7	2.135	0.144	**Not significant**
		Private	2	1	3			
		Aided	7	3	10			

Table 4.31 shows that for the demographic parameters, status and location, p>0.05.Hence there is **no significant** association between having athletic tracks in the colleges of both the states. For the presence of athletic tracks, the location, nature and status levels are high in Karnataka when compared to Kerala. Further, there is **significant** association between having athletic tracks with the nature of colleges in Karnataka but there is **no significant** association regarding the same in Kerala. In Karnataka, the location and status levels are greater than 0.05 that is, 0.669 and 0.284. Hence, there is **no significant** difference. For the case of nature level, the p-value is 0.043 which is lesser than 0.05. So, there is a **significant** difference among them. In Kerala, the location, nature and status levels are greater than 0.05 that is, 0.891, 0.5960 and 0.144, respectively. There is **no significant** difference among them.

Association between the level of rating on coaching and demographic parameters

The investigator has grouped rating into three levels (average, good, excellent). The chi-square test was conducted in order to know the association between the level of rating on coaching and demographic parameters whose results are depicted in Table 4.32.

Table 4.32 Rating towards coaching and demographic parameters of Karnataka and Kerala Colleges.

State	Demographic Parameter	Categories	Rating towards coaching			Total	Chi-square Value	p-Value	Decision
			Average	Good	Excellent				
Karnataka	Location	Urban	2	9	7	18	2.78	0.365	**Not significant**
		Rural	0	0	2	2			
	Nature	Boys	0	0	0	0	1.445	0.598	**Not significant**
		Girls	0	1	2	3			
		Co-Education	2	12	3	17			
	Status	Govt.	2	3	4	9	5.029	0.284	**Not significant**
		Private	0	1	2	3			
		Aided	0	2	6	8			
Kerala	Location	Urban	1	9	4	14	0.623	0.732	**Not significant**
		Rural	1	4	1	6			
	Nature	Boys	0	0	0	0	3.348	0.187	**Not significant**
		Girls	0	1	2	3			
		Co-Education	2	12	3	17			
	Status	Govt.	0	2	0	2	1.197	0.55	**Not significant**
		Private	2	11	5	18			
		Aided	0	0	0	0			

Table 4.32 shows that the p-value for nature, status and location of colleges is more, that is, 0.365, 0.598, 0.284, respectively for Karnataka, whereas0.732, 0.187 and 0.550 for Kerala. It is seen that the corresponding p-values are greater than 0.05 for each case. Hence, there is **no significant** association between the level of rating for coaching and the demographic parameters, nature of the college, location and status. It is the large number of coaching camps that provide enough number of opportunities for the growth and progress of sports persons in both the states. This might be the reason that the mentioned variables in both the states show no significance.

Financial assistance and demographic profile of the colleges

ANOVA test was performed in order to know the difference between the financial assistance and the demographic parameters of the colleges in Karnataka and Kerala as shown in Table 4.33.

Table 4.33 ANOVA test results of financial assistance and the demographic profile in the Colleges of Karnataka and Kerala states.

Source	Type III Sum of Squares	df	Mean Square	F	p-value
State	0.764	1	0.764	0.064	0.803
Status	15.517	2	7.758	0.647	0.532
Location	6.153	1	6.153	0.513	0.48
Nature	51.92	2	25.96	2.165	0.134
Error	323.742	27	11.99		

Table 4.33 gives the ANOVA results and it shows that there is no statistic significant difference between the financial assistance and the demographic parameters, status, location and nature, of the colleges in both Karnataka and Kerala.

Correlation between income and expenditure

The correlation between income and expenditure of the colleges help to understand whether the colleges spend according to their source of income. The results of correlation coefficient are tabulated in Table 4.34.

Table 4.34 Correlation between income and expenditure in the Colleges of Karnataka and Kerala states.

Karnataka		**Expenditure**
Income	Pearson Correlation	0.799
	P value	0.044
Kerala		**Expenditure**
Income	Pearson Correlation	0.745
	P value	0.048

The results show that the p-value is less than 0.05 for both Karnataka and Kerala. For Karnataka, there is statistically significant positive correlation, r=0.799, between income and expenditure, and for Kerala, r=0.745. There-value is almost equal from which it is inferred that both the states spend according to their income. In other words, if the income increases, the expenditure also increases and maximum facilities can be provided for sportspersons in colleges.

Correlation between financial assistance and infrastructure facility

In order to find out the relationship between financial assistance and infrastructure facilities, the investigator determined the score for infrastructure (Yes=1, No=0) and later used Pearson's correlation co-efficient between the variables.

Table 4.35 Correlation between financial assistance and infrastructure facilities available in the Colleges of Karnataka and Kerala states.

Karnataka		**Infrastructure Facility**
Financial Assistance	Pearson Correlation	0.61
	p-Value	0.00
Kerala		**Infrastructure Facility**
Financial Assistance	Pearson Correlation	0.547
	p-Value	0.002

Table 4.35 gives the correlation between financial assistance and infrastructure facilities. It shows that there is significant positive correlation (r= 0.610 for Karnataka and r= 0.547 for Kerala) between financial assistance and infrastructure facility. Since the p-value is less than 0.05 for both the states, the hypothesis is accepted and can be stated that there is a significant relationship between the variables in both Karnataka and Kerala. From the above analysis, it can be inferred that the colleges receiving more amount of financial assistance can have better infrastructure.

Structured equation modeling

Structured equation model was developed to test the conceptual model. Multi-group analysis was conducted to establish the relationship between the variables. The conceptual model was developed to test whether financial assistance given to colleges has a direct impact on the level of participation in sports moderating through infrastructure facilities. The conceptual model is depicted in Figure 4.1.

Figure 4.1 Conceptual Model

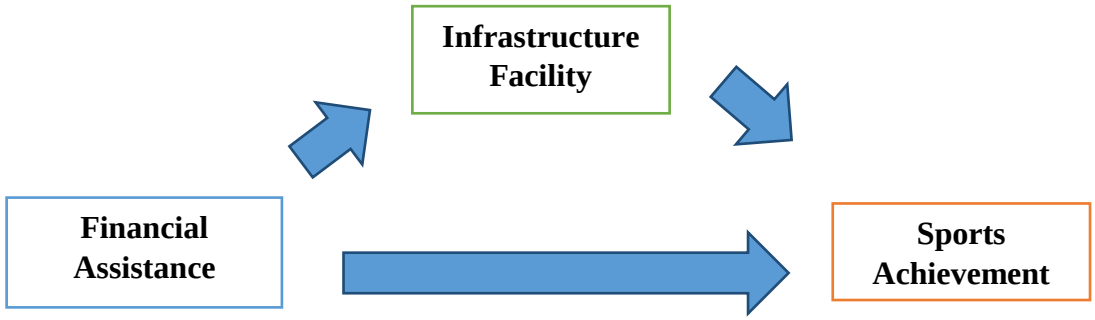

Table 4.36 Estimated coefficients with the p-value in Karnataka and Kerala states.

			Estimate	S.E.	p-value
Infrastructure Facility	<---	Financial Assistance	0.232	0.41	<0.05
Sports Achievement	<---	Infrastructure Facility	0.29	0.45	<0.05
Sports Achievement	<---	Financial Assistance	0.39	0.4	<0.05

The above table shows that financial assistance has significant impact on the infrastructure facility (β=0.232, p <0.05), and on sports achievement (β=0.39, p<0.05). Further, the infrastructure facility has significant impact on sports achievement (β=0.29, p<0.05). According to the results, when financial assistance goes up by 1 unit, infrastructure facility goes up by 0.232 unit. When infrastructure facility goes up by 1 unit, sports achievement goes up by 0.29 unit. Further, it showed

that when financial assistance goes up by 1 unit, sports achievement goes up by 0.39 unit.

Figure 4.2 Structured equation model

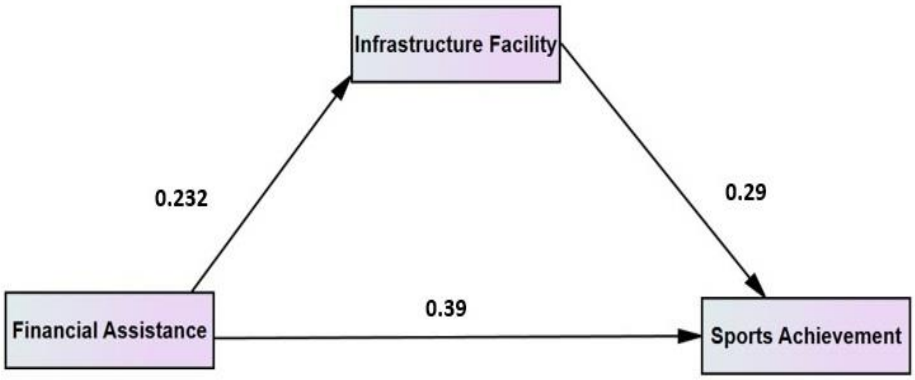

Table 4.37 Standardized total effects.

	Financial Assistance	**Infrastructure Facility**
Infrastructure Facility	0.232	0.00
Sports Achievement	0.622	0.29

The standardized total (direct and indirect) effect of financial assistance on the infrastructure facility is 0.232. That is, when financial assistance goes up by 1 unit, the infrastructure facility goes up by 0.232 unit. The standardized total (direct and indirect) effect of financial assistance on sports achievement is 0.622 which means that when financial assistance goes up by 1 unit, sports achievement goes up by 0.622 unit. The standardized total (direct and indirect) effect of infrastructure facility on sports achievement is 0.29, when infrastructure facility goes up by 1 unit, sports achievement goes up by 0.29 unit. This shows that as the financial assistance increases, infrastructure facilities also increase leading to increased sports achievements. Furthermore, increase in financial assistance increases sports achievements.

Table 4.38 Model Fit Indices to check for overall model goodness of fit.

Model fit indicator	**Threshold Level**	**Model Value**
CMIN/df	Less than 3	2.86
GFI	Greater than 0.9	0.986
AGFI	Greater than 0.9	0.954
NFI	Greater than 0.9	0.925
RMSEA	Less than 0.05	0.025
Chi-Square p value	Greater than 0.05	0.351

Since the developed model satisfies all the cut off values recommended by Hooper et al (2008), it can be inferred that the developed model is good fit to the data.

*Relative chi-square index, (CMIN/df or Chi-Square/df), Goodness-of-fit statistic (GFI), adjusted goodness-of-fit statistic (AGFI), Normed-fit index (NFI), Root mean square error of approximation (RMSEA).

University Director of Physical Education

4.2 University Profile

The present study has been conducted on the universities of Karnataka and Kerala. A comparative analysis is carried out of the profiles of the Director of Physical Education between the two state universities. On the basis of available data shown in Tables 4.39 and 4.40, discussion and interpretation were done.

Table 4.39 Profile of Director of Physical Education of Karnataka state Universities.

State	Parameters	Categories	Frequency	Percentage (%)
Karnataka	Status	Govt.	4	100
		Aided	0	0
		Total	**4**	**100**
	Location	Urban	2	50
		Rural	2	50
		Total	**4**	**100**
	Nature	Boys	0	0
		Girls	0	0
		Co-Education	4	100
		Total	**100**	**100**
	Strength of Students	Less than 5000	0	0
		5000-10000	0	0
		10001-15000	2	50
		Above 15000	2	50
		Total	**4**	**100**
	Year of Establishment	Before 1850	1	12.5
		1851-1900	0	0
		1901-1950	3	75
		After 1951	1	12.5
		Total	**4**	**100**

Table 4.40 Profile of Director of Physical Education of Kerala state Universities.

State	Parameters	Categories	Frequency	Percentage (%)
Kerala	Status	Govt.	4	100
		Aided	0	0
		Total	**4**	**100**
	Location	Urban	3	75
		Rural	1	25
		Total	**4**	**100**
	Nature	Boys	0	0
		Girls	0	0
		Co-Education	4	100
		Total	**4**	**100**
	Strength of Students	Less than 5000	0	0
		5000-10000	0	0
		10001-15000	1	25
		Above 15000	3	75
		Total	**4**	**100**
	Year of Establishment	Before 1850	0	0
		1851-1900	1	75
		1901-1950	2	50
		After 1951	1	25
		Total	**4**	**100**

In the results shown in Tables 4.39 and 4.40, the universities of Karnataka and Kerala that have been selected for the study are government universities. Also, all the universities have co-education in both the states. It is seen that the strength of students in Karnataka (50%) is above 15000. A majority of the universities in Karnataka (N=3) and Kerala (N=2) were established between 1901-1950. Most of the Kerala universities (N=3) are situated in urban areas whereas the universities of Karnataka are situated in both urban (N=2) and rural (N=2) areas. Majority of the universities in Kerala (75%).The number of directors shows that the directors' recruitment was not done in recent times. In addition, special girls' directors are needed for the universities with girls 'sports wings. This shall encourage girls to participate in large numbers in sports. In Kerala, because a greater number of

universities are situated in urban areas, the rural students who are interested to take up sports could be affected.

4.2.2 Profile of Director of Physical Education

Table 4.41 Profile of Director of Physical Education in Karnataka state Universities.

State	Parameters	Categories	Frequency	Percentage (%)
Karnataka	Years of Service	Less than 10 years	0	0
		11-20	0	0
		21-30	2	50
		More than 31 years	2	50
		Total	**4**	**100**
	Gender	Male	4	100
		Female	0	0
		Total	**4**	100
	Nature of Job	Temporary	0	0
		Permanent	4	100
		Total	**4**	**100**
	Academic Qualification	B.A.	1	25
		B.Com	0	0
		B.Sc.	1	25
		B.C.A.	1	25
		B.B.M./B.B.A.	1	25
		Total	**4**	**100**
	Professional Qualification	B.P.Ed.	4	100
		M.P.Ed.	4	100
		N.I.S. (Diploma)	1	25
		M.Phil.	0	0
		Ph.D.	4	100

Table 4.42 Profile of Director of Physical Education in Kerala state Universities.

State	Parameters	Categories	Frequency	Percentage (%)
Kerala	Years of Service	Less than 10 years	0	0
		11-20	0	0
		21-30	3	75
		More than 31 years	1	25
		Total	**4**	**100**
	Gender	Male	4	100
		Female	0	0
		Total	**4**	100
	Nature of Job	Temporary	0	0
		Permanent	4	100
		Total	**4**	**100**
	Academic Qualification	B.A.	2	50
		B.Com.	1	25
		B.Sc.	0	0
		B.C.A.	0	0
		B.B.M./B.B.A.	`1	25
		Total	**4**	**100**
	Professional Qualification	B.P.Ed.	4	100
		M.P.Ed.	4	100
		N.I.S.(Diploma)	1	25
		M.Phil.	2	50
		Ph.D.	4	100

Tables 4.41 and 4.42 show the profiles of Director of physical education for Karnataka and Kerala state universities, respectively. It is notable that 75% of the directors of physical education in Kerala and 50% of those in Karnataka have 21to 30 years of service. All the directors of physical education in both the states are male and permanent employees. Regarding academic qualification, two directors in Kerala have B.A. degree and others have degrees in commerce and science. The professional qualification showed that 100% of the directors in both Karnataka and Kerala have B.P.Ed. In addition to this, 100% of the directors in both the states have Ph.D.

Very few directors have less than 10 years of experience indicating the lack of young directors in both the states. This is per government norms, because the

director's position is meant for experienced faculty only. For the director's position, the minimum education qualification is M.P.Ed. with Ph.D. degree, common to both Karnataka and Kerala states. In both the states, 25% of the Directors of physical education have undergone NIS (diploma) courses. Further, 50% of the Directors of physical education in universities of Karnataka are awarded M. Phil. more are in Kerala Also, it can be noted that it is gender-specific. To summarize, there are experienced and qualified directors of physical education in Karnataka and Kerala, with slight variations in academic and professional qualifications between the two states.

4.2.3 Director of Physical Education Department Profile

The investigator was interested to profile the details of physical education department of the universities which are discussed in this section.

Table 4.43 Available independent Departments of Physical Education in Karnataka and Kerala state Universities.

State	Availability	Frequency	Percentage (%)
Karnataka	Yes	4	100
	No	0	0
	Total	**4**	**100**
Kerala	Yes	4	100
	No	0	0
	Total	**4**	**100**

Table 4.43 shows that all universities in Karnataka and Kerala have separate sports departments. The prioritization of sports and physical activities is hence clear. This also indicates commitment to fostering a well-rounded educational experience that includes both academic and athletic development. Additionally, it reflects recognition of the importance of sports in promoting the overall student wellbeing and enhancing the universities.

Table 4.44 Sports Facilities available in the University Departments of Physical Education in Karnataka and Kerala state Universities.

State	Sports Facility	Responses		Percentage of Cases (%)
		N=4	Percentage (%)	
Karnataka	Computer	4	14.3	100
	Printer	4	14.3	100
	Projector	3	10.7	75
	OHP	2	7.1	50
	TV/Video Player	3	10.7	75
	Wash Room	4	14.3	100
	Dress Changing Room	4	14.3	100
	Store Room	4	14.3	100
	Total	**28**	**100**	**700**
Kerala	Computer	4	12.9	100
	Printer	4	12.9	100
	Projector	4	12.9	100
	OHP	3	9.7	75
	TV/Video Player	4	12.9	100
	Wash Room	4	12.9	100
	Dress Changing Room	4	12.9	100
	Store Room	4	12.9	100
	Total	**31**	**100**	**775**

a. Dichotomy group tabulated at value 1.

Table 4.44 shows the sports facilities of universities revealing that all universities in Karnataka have computers, printers, washrooms, and store room amenities. 75% of the universities in Karnataka have projectors and TV/video player facility and 50% of the universities have OHP (Overhead projector)facility. In Kerala, all universities have computers, printers, projectors, TV/video players, wash rooms, store rooms and dress changing rooms. 75% of the universities in Kerala have

OHP facility. From the analysis, it can be concluded that more sports facilities are available in the University Departments of Physical Education in Kerala than the Karnataka state universities. All universities in Kerala offer a comprehensive, broader range of facilities for example, dress changing rooms indicating extensive commitment and support. Additionally, the higher percentage of universities in Kerala with facilities like projectors, TV/video players and OHP, reflects the greater emphasis laid on enhancing sports and training.

Table 4.45 Details of Clerical Staff of Karnataka and Kerala state universities.

State	Availability	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
Karnataka	Yes	4	100	100	100
Kerala	Yes	4	100	100	100

Table 4.45 shows that all universities of Karnataka and Kerala have clerical staff. This indicates a standardized administrative structure in higher education institutions. This contributes to efficient organizational functioning supporting various administrative tasks within the universities. The consistent presence of clerical staff highlights a commonality in the administrative setup, emphasizing the importance of administrative support in the academic environment of both the states.

Table 4.46 Number of Clerical Staff of Karnataka and Kerala state Universities.

State	No. of Staff	Frequency	Percentage (%)
Karnataka	4	1	25
	5	1	25
	6	1	25
	10	1	25
Total	**25**	**4**	**100**
Kerala	3	2	50
	6	1	25
	10	1	25
Total	**19**	**4**	**100**

Table 4.46 shows that two universities have two clerical staff each and one university has six clerical staff and another university has ten clerical staffs. In Karnataka, one university has four clerical staffs, and on an average, each university in Karnataka has 6 clerical staffs in their physical education department.

Table 4.47 Number of Ground Staff of Karnataka and Kerala state universities.

State	No. of staff	Frequency	Percentage (%)	Valid Percentage (%)
Karnataka	2	2	50	50
	3	1	25	25
	26	1	25	25
Total	**31**	**4**	**100**	**100**
Kerala	4	2	50	50
	5	1	25	25
	6	1	25	25
Total	**15**	**4**	**100**	**100**

Table 4.47 shows that the universities in Karnataka have more ground staff than those in Kerala. The data indicate that the universities in Karnataka allocate more resources to ground staff compared to those in Kerala. This difference may reflect varying priorities in maintaining and managing outdoor facilities emphasizing the significance of ground related activities within the Karnataka university system. The higher presence of ground staff indicates a greater focus on sports infrastructure, landscaping a potential distinction in the approach to campus maintenance and activities in the two states.

Table 4.48 Support from University in the Karnataka and Kerala state Universities.

State	Support From University	Responses		Percentage of Cases (%)
		N=4	Percentage (%)	
Karnataka	Grace Mark	2	9.5	50
	Sports Persons Disabilities	2	9.5	50
	Folk Games	2	9.5	50
	Insurance	3	14.3	75
	Holidays Camp	4	19	100
	Staff Tournament	3	14.3	75
	Rural Women Sports	2	9.5	50
	Traditional Games	3	14.3	75
	Total	**21**	**100**	**525**
Kerala	Grace Mark	2	8	50
	Sports Person Disabilities	4	16	100
	Folk Games	4	16	100
	Insurance	4	16	100
	Holidays Camp	3	12	75
	Staff Tournament	4	16	100
	Rural Women Sports	2	8	50
	Traditional Games	2	8	50
	Total	**25**	**100**	**625**

a. Dichotomy group tabulated at value 1.

Table 4.48 shows the various kinds of support from the universities to sports and sportspersons. It reveals that50% of the universities in Karnataka give support to people with disabilities, offer folk games, and encourage rural women. 75% of the universities in Karnataka provide insurance facility and conduct staff tournaments. Likewise, the universities in Kerala support people with disabilities, conduct folk games and staff tournaments, and provide insurance facility as well. 50% of the universities have grace mark, women from rural background, and traditional games. This data underscores the diverse approaches taken by universities in both the states to enhance the overall university experience. While Karnataka universities focus on a

balanced combination of support for various groups, staff engagement, and insurance coverage, Kerala universities have universally embraced a holistic model of support that caters to different needs. It is evident that both the states prioritize the well-being and engagement of their university communities, although their specific strategies and offerings could differ.

4.2.4 Sports Infrastructure Facilities

The details of sports infrastructure facility in the universities were collected from the directors of physical education department and are discussed in the following section.

Table 4.49 Availability of Sports facility in Karnataka and Kerala state Universities.

State	Availability	Frequency	Percentage (%)
Karnataka	Yes	4	100
	No	0	0
	Total	**4**	**100**
Kerala	**Yes**	4	100
	No	0	0
	Total	**4**	**100**

Table 4.49 indicates that all the universities in Karnataka and Kerala have sports facility. This emphasis on sports facilities reflects a commitment towards promoting physical activities and potentially fostering a healthy and active lifestyle among students in the respective regions.

Table 4.50 Details of infrastructure facilities in Karnataka and Kerala state Universities.

State	Infrastructure Facility	Responses		Percentage of Cases (%)
		N=4	Percentage (%)	
Karnataka	Fitness center	4	23.5	100
	Indoor	4	23.5	100
	Outdoor	4	23.5	100
	Training and coaching	4	23.5	100
	Technology	1	5.9	25
	Total	**17**	**100**	**425**
Kerala	Fitness center	4	20	100
	Indoor	4	20	100
	Outdoor	4	20	100
	Training and coaching	4	20	100
	Technology	4	20	100
	Total	**20**	**100**	**500**

Table 4.50 shows that all the universities in Karnataka have fitness centers, indoor and outdoor training and coaching facilities. Only 25% of the universities in Karnataka have technological and scientific facilities. Similarly, Kerala universities have fitness centers, indoor and outdoor training and coaching facilities with adequate technology. From the analysis, it can be concluded that the University Departments of Physical Education in Kerala have provided greater infrastructure facility for sports than in Karnataka. It clearly indicates that a large number of sportspersons in team games or individual performances have been from Kerala at the national events, further representing our country in international competitions. The current research urges more and more sports infrastructure be created to enable greater participation in competitive sports at both national and international levels.

Table 4.51 Details of outdoor games in Karnataka and Kerala state Universities.

State	Outdoor Games	Responses		Percentage of Cases (%)
		N=4	Percentage (%)	
Karnataka	Hockey	3	6.8	75
	Kabaddi	4	9.1	100
	Cricket Pitch	4	9.1	100
	Football	4	9.1	100
	Kho-Kho	4	9.1	100
	Ball Badminton	4	9.1	100
	Volleyball	4	9.1	100
	Basketball	4	9.1	100
	Handball	4	9.1	100
	Tennis	3	6.8	75
	Throw Ball	4	9.1	100
	Netball	2	4.5	50
	Total	**44**	**100**	**1100**
Kerala	Hockey	3	7.1	75
	Kabaddi	4	9.5	100
	Cricket Pitch	4	9.5	100
	Football	4	9.5	100
	Kho-Kho	4	9.5	100
	Ball Badminton	3	7.1	75
	Volleyball	4	9.5	100
	Basketball	4	9.5	100
	Handball	3	7.1	75
	Tennis	3	7.1	75
	Throw Ball	2	4.8	50
	Netball	4	9.5	100
	Total	**42**	**100**	**1050**

a. Dichotomy group tabulated at value 1.

Table 4.51 shows that all the universities in Karnataka have kabaddi, cricket pitch, football, kho-kho, volleyball, basketball, and netball. 75% of the universities in Karnataka have hockey, handball, tennis, and only 50% of the universities have throwball. On the other hand, all the universities in Kerala have outdoor games such as kabaddi, cricket pitch, football, kho-kho, ball badminton, volleyball, basketball,

throwball and handball, and 75% of the universities have hockey. From the analysis, it can be concluded that the University Departments of Physical Education in Karnataka have more outdoor games than the Kerala state universities.

Table 4.52 Details of indoor games in Karnataka and Kerala state universities.

State	Indoor Games	Responses		Percentage of Cases (%)
		N=4	Percentage (%)	
Karnataka	Badminton	4	15.4	100
	Volleyball	3	11.5	75
	Kabaddi	4	15.4	100
	Table Tennis	3	11.5	75
	Chess	3	11.5	75
	Wrestling	3	11.5	75
	Basketball	4	15.4	100
	Multi Gym	2	7.7	50
	Total	**26**	**100**	**650**
Kerala	Badminton	4	15.4	100
	Volleyball	2	7.7	50
	Kabaddi	4	15.4	100
	Table Tennis	4	15.4	100
	Chess	4	15.4	100
	Wrestling	4	15.4	100
	Basketball	1	3.8	25
	Multi Gym	3	11.5	75
	Total	**26**	**100**	**650**

a. Dichotomy group tabulated at value 1.

Table 4.52 shows that all the universities in Karnataka have badminton, kabaddi and basketball. 75% of the universities have table tennis, volleyball, chess and wrestling, and 50% of the universities have multi gym facility. On the other hand, all the universities in Kerala have indoor games such as badminton, kabaddi, table tennis, chess and wrestling.50% of the universities have volleyball and 25% have basketball. From the analysis, it can be concluded that the University Departments of Physical Education in Karnataka and Kerala have proportionate indoor and outdoor games facility. The indoor basketball facility is available in all the universities in Karnataka as compared to Kerala. Further, Kerala state

universities have a higher percentage of multi-gym facility than Karnataka. Both the states have given equal weightage for kabaddi indoor facilities.

Table 4.53 Details of Athletic Tracks in Karnataka and Kerala state universities.

State	Availability	Frequency	Percentage (%)	Valid Percentage (%)
Karnataka	Yes	4	100	100
Kerala	Yes	4	100	100

Table 4.53 reveals that all the universities, both in Karnataka and Kerala, have athletic tracks. This underscores consistent provision of facilities for track and field events across education institutions, emphasizing commitment to supporting athletics and physical fitness among students.

4.2.5 Coaching and Training

The opinion of the directors of physical education regarding coaching was collected to rate the coaching and training facility in the universities whose results are tabulated in Table 4.54.

Table 4.54 Ratings towards coaching in Karnataka and Kerala State Universities.

State	Rating	Frequency	Percentage (%)	Valid Percentage (%)
Karnataka	Excellent	2	50	50
	Good	1	25	25
	Average	1	25	25
	Total	**4**	**100**	**100**
Kerala	Excellent	2	50	50
	Good	2	50	50
	Total	**4**	**100**	**100**

Table 4.54 show that the Directors of Physical Education department in the universities were asked to rate the coaching facility in the department. 50% of the directors of physical education departments rated ‘Excellent’ and 25% rated ‘Good’ and ‘Average’, respectively. On the other hand, 50% of the directors of physical education departments in Kerala rated coaching as ‘Excellent’ in the universities and the remaining 50% rated ‘Good’. Thus, Kerala university directors of physical education have offered higher ratings for coaching facilities compared to Karnataka universities.

4.2.6 Financial Assistance: Source of Income

In general, the universities raise fund for the development of infrastructure facilities. The sources of income enable to know the level of financial assistance received the results of which are depicted in Table 4.55.

Table 4.55 Financial Grants received by the universities of Karnataka and Kerala states for five years (in rupees).

State	Source of Income	2014-15	2015-16	2016-17	2017-18	2018-19
Karnataka	• Grants from the government	0	1,20,00,000	0	72,96,000	0
	• Grants from university	2,17,16,798	2,31,60,000	2,65,00,000	2,83,89,000	3,51,72,000
	• Contribution from the college management	0	0	0	0	0
	• Donations	0	0	0	0	0
	• Fee collected from the students	0	0	0	0	0
	• Sponsorships	0	0	0	0	0
	• Any other	0	0	0	0	0
Kerala	• Grants from the government	0	0	0	0	0
	• Grants from university	1,97,16,798	2,17,60,000	2,35,00,000	2,61,89,000	3,85,00,000
	• Contribution from the college management	0	0	0	0	0
	• Donations	0	0	0	0	0
	• Fee collected from the students	0	0	0	0	0
	• Sponsorships	0	0	0	0	0
	• Any other	0	0	0	0	0

Table 4.55 revealed that Karnataka received ₹72,96,000 to ₹1,20,00,00 worth of grant from the government whereas Kerala did not receive any grant from the government. Karnataka universities received amount from ₹2,17,16,798 to

₹3,51,72,000 whereas the universities of Kerala received ₹1,97,16,798 to ₹3,85,00,000 as grant from university. Both Karnataka and Kerala did not receive any fund through donations, fees from students, sponsorship or any other sources. The analysis shows that the universities of Karnataka received more financial grants from the government than Kerala. In the year 2018-19, Kerala universities received more grant than Karnataka universities. The grants allocated towards sports every year is seen to increase from 2014-15 to 2018-19, which clearly indicates that the amount has been utilized for organizing more events and training programs for undergraduate and postgraduate students.

Table 4.56 Expenditures by the Universities of Karnataka and Kerala states.

State	Expenditure	2014-15	2015-16	2016-17	2017-18	2018-19
Karnataka	• Purchase of equipment	25,00,803	39,52,976	14,51,530	24,33,890	41,83,776
	• Incentive for achievers	12,36,020	12,49,000	14,49,000	17,48,000	16,76,000
	• Maintenance of equipment and facilities	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000
	• TA and DA and sports jersey for players	1,89,66,798	1,94,10,000	2,04,50,000	2,09,39,000	2,66,72,000
	• Honorariums for coaches	0	0	0	0	0
	• Scholarships for students	10,68,500	9,18,200	15,31,200	13,04,500	10,75,000
	• Miscellaneous expenses	0	0	0	0	0
	• Any other	0	0	0	0	0
Kerala	• Purchase of equipment	19,00,000	20,50,000	22,96,000	27,76,000	48,68,000
	• Incentive for achievers	8,00,000	10,50,000	9,00,000	9,75,000	9,25,000
	• Maintenance of equipment and facilities	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000
	• TA and DA and sports jersey for players	1,88,66,798	1,90,10,000	2,01,50,000	2,14,39,000	2,81,72,000
	• Honorariums for coaches	0	0	0	0	0
	• Scholarships for students	10,54,500	10,57,200	10,57,200	10,54,500	10,77,000
	• Miscellaneous expenses	0	0	0	0	0
	• Any other	0	0	0	0	0

Table 4.56 shows that among the universities in Karnataka, an amount of ₹14,51,530 to ₹41,83,776has been spent for the purchase of equipment every year. Around ₹12,36,020 to ₹17,48,000 is given as incentives to achievers. Further, ₹6,00,000 is spent for maintenance of equipment and facilities every year, with₹1,89,66,798 to ₹2,66,72,000 being given as TA and DA, and towards sports jersey to the players. In addition to this, ₹9,18,200to ₹13,04,500is spent as scholarship for students.

In the universities in Kerala, ₹19,00,000to ₹48,68,000is spent for the purchase of equipment every year. Around ₹8,00,000 to ₹10,50,000is given as incentive to achievers. Further₹6,00,000 is spent for maintenance of equipment and facilities every year whereas ₹1,88,66,798to ₹2,81,72,000is given as TA and DA, and for sports jersey to the players. In addition to this, ₹10,54,500to ₹10,77,000 is spent as scholarship for students. From the above analysis, it can be concluded that the universities of Karnataka have given more importance by spending larger amount for the development of sports.

Table 4.57 Expenditures on Inter-collegiate/All India/South Zone Competition for five years.

State	Year	IC Amount	SZ Amount	AI Amount
Karnataka	2014-15	9,23,131	15,62,000	18,90,000
	2015-16	9,90,762	4,92,241	27,36,394
	2016-17	12,44,883	19,72,569	28,74,351
	2017-18	9,00,000	14,15,896	15,87,405
	2018-19	14,78,844	21,02,729	17,74,897
Kerala	2014-15	9,80,840.7	15,62,000	18,90,000
	2015-16	10,72,393	5,04,390.5	29,14,483
	2016-17	14,29,467	19,72,569	28,74,351
	2017-18	15,16,611	15,28,402	16,79,682
	2018-19	17,43,266	21,02,729	24,62,346

Table 4.57 shows the expenditure of the universities in Karnataka and Kerala in intercollegiate/All India/South Zone competitions for five years. The results show an increasing trend in the expenditure in Karnataka universities, particularly in the year 2018-19. Kerala universities also display an increasing trend in the expenditure, with higher expenditure in 2018-19 than the other years. The expenditure towards Inter-collegiate/All India competitions is maximum in the year 2018-19in Kerala universities as compared to Karnataka. Further, the total five-year expenditure towards Inter-collegiate competitions is more in Kerala universities when compared to Karnataka universities.

4.2.7 Level of Sports Achievement

The details of the sports achievement in various games in the universities of Karnataka and Kerala are tabulated in Tables 4.58 and 4.59.

Table 4.58 Sports Achievement of Karnataka universities in the past 5 years.

Game/Event	Sports Achievement									
	Men					Women				
	2014-15	2015-16	2016-17	2017-18	2018-19	2014-15	2015-16	2016-17	2017-18	2018-19
Athletics	9	11	18	14	14	7	6	7	15	13
Archery										
Badminton										
Ball Badminton		1	1			1	1	1	1	1
Basketball		1								
Chess			1				1			
Cricket					1		1			
Cross Country	1			1	1		1		1	1
Football							1			
Gymnastics										
Handball										1

Hockey		1				1	1	2	1	1
Kabaddi	1	1			1	1	1	1	1	1
Kho-Kho		1	2	3		1		1	2	2
Net ball				1	1		1		1	1
Power Lifting	1		4	1	2	2	2	2	2	
Softball										
Swimming			2	3				2		
Table Tennis										
Taekwondo						1				
Tennis										
Throwball										
Volleyball										
Weight Lifting and Best Physique	3	2	2	3	3			1	1	3
Wrestling			1		1	2	2			6
Yoga	1		1	1	1					1
Any other										

Table 4.59 Sports Achievement of Kerala universities in the past 5 years.

Game/Event	**Sports Achievement**									
	Men					**Women**				
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Athletics	9	8	9	10	13	9	8	7	8	13
Archery										
Badminton	1	1				1				
Ball Badminton										
Basketball		1				1	1	1		
Chess									1	
Cricket										
Cross Country						1	1			
Football		1							1	1
Gymnastics										
Handball		1					1			
Hockey										
Kabaddi								1		
Kho-Kho			1	1			1	1	2	

Net ball										
Power Lifting							1			
Softball			1					1		
Swimming										
Table Tennis		1					2			
Taekwondo						1				
Tennis										
Throwball										
Volleyball		1	1			1	2	2	1	
Weight Lifting and Best Physique	1	2	1	1	2	1	2	1	2	2
Wrestling										
Yoga										
Any other										

Tables 4.58 and 4.59 show the details of the students' sports achievements in various games over five years (2014-2018). The numbers within the cells represent the 'number of students' who have accomplished in the respective games in South-zone Inter-university/All India Inter-university competitions. Table 4.58 depicts the students' sports achievements from the universities in Karnataka. It shows that both men and women accomplished sports achievement at high level 114 medals in athletics over the past five years. On the other hand, Table 4.59 shows the sports achievement of Kerala universities in athletics 94 medals which is slightly lower. From the above results, it can be inferred that the students from Karnataka universities have higher sports achievement in greater number of games than the students from Kerala universities. The numbers in weight lifting games show that the sports achievement of the students in Karnataka universities is greater 18 medals than Kerala universities 15 medals. But in games like badminton 3 medals, basketball 4 medals, table tennis 3 medals, and volleyball 8 medals, Kerala students have shown higher sports achievement than the students from Karnataka universities. The overall results show that the students from Karnataka universities have greater sports achievement than the students form Kerala universities in the analyzed five-year period.

Classification of Sports Achievement

The investigator was interested to know the level of sports achievement of students in various games. Therefore, numbers denoting sports achievement in all games are converted into a score ranging from 1 to 5. If the score is less than 2, then it will be considered as sports achievement of a 'very low level'. If the score lies between 2.1 to 3, then it is labeled as 'Low level'. If the mean score lies between 3.1 to 4, then it is considered as 'high level' and if the mean score is above 4.1, then it is regarded as 'very high level'.

Table 4.60 Level of Sports Achievements from Karnataka and Kerala state Universities.

State	Level of Sports Achievement	Frequency	Percentage (%)
Karnataka	Very High Level	2	50
	High Level	2	50
	Low Level	0	0
	Very Low level	0	0
	Total	**4**	**100**
Kerala	Very High Level	1	25
	High Level	2	50
	Low Level	1	25
	Very Low level	0	0
	Total	**4**	**100**

Table 4.60 shows the classification of students' sports achievement in various games and it reveals that 25% of the students from Kerala universities have sports achievement at 'very high level' and 50% are at 'high level'. The remaining 25% of the students have shown sports achievement at 'very low level' in the games. Further, 50% of the students from Karnataka universities have sports achievement at 'very high level' and the remaining 50% at 'high level'. From the analysis, it can be concluded that the universities of Karnataka have more sports achievements than the Kerala state universities**.**

Financial assistance and demographic profile of the Director of Physical Education

One-way ANOVA test is performed in order to know the difference in the financial assistance among the parameters of the director of physical education. Table 4.61 shows the result of the test.

Table 4.61 Two-Way ANOVA

Source	Sum of Squares	df	Mean Square	F	p-value
State	0.764	1	0.764	64	0.803
Status	15.517	2	7.758	0.647	0.532
Location	6.153	1	6.153	0.513	0.48
Nature	51.92	2	25.96	2.165	0.134
Error	323.742	27	11.99		

Table 4.61 shows the ANOVA result with no significant difference in the received financial assistance among the demographic profile of the universities. Since the p-value is greater than 0.05, the null hypothesis is accepted.

Correlation between the University Infrastructure facility and students' Sports achievement

The investigator was interested to understand the relationship between the university infrastructure facility and students' participation in the games. For this purpose, Karl Pearson's correlation co-efficient is calculated with the results being discussed in this section.

Table 4.62 Correlation between Infrastructure and Sports Achievement in Karnataka and Kerala state Universities.

Karnataka		**Sports Achievement**
Infrastructure	Pearson's r	0.741
	p-value	0.0155
Kerala		**Sports Achievement**
Infrastructure	Pearson's r	0.832
	p-value	0.0141

Table 4.62 shows that there is significant correlation between the university infrastructure and the level of sports achievement (p>0.05). From the above analysis, it can be concluded that having good infrastructure does not guarantee the level of sports achievement among students.

Correlation between University Coaching and Students' Sports Achievement

The investigator was interested to understand the relationship between the university coaching facility and the students' sports achievement in the games. For this purpose, Karl Pearson's correlation co-efficient is calculated and the results are as follows.

Table 4.63 Correlation Matrix of Sports Achievement and Coaching in Karnataka and Kerala state Universities.

Karnataka		**Sports Achievement**
Coaching	Pearson's r	0.224
	p-value	0.002
Kerala		**Sports Achievement**
Coaching	Pearson's r	0.327
	p-value	0.000

Table 4.63 shows that there is significant correlation between coaching and sports achievement (p<0.05)in both the states. The correlation coefficient, r=0.224 for Karnataka, and r=0.327 for Kerala, thus showing positive correlation between coaching and sports achievement.

Difference in Infrastructure, Sports support, Sports Achievement and Coaching between Universities of Karnataka and Kerala states

The investigator was interested to know whether there was significant difference in the infrastructure, sports support, sports achievement, and coaching between the universities of Karnataka and Kerala. For this purpose, independent sample t-testis performed with the results discussed as follows.

Table 4.64 Descriptive statistics of Infrastructure, Sports support, Sports Achievement and Coaching facilities of Karnataka and Kerala state universities.

	State	N	Mean	Standard Deviation
Infrastructure	Karnataka	4	23.5	13.13031
	Kerala	4	20	0.71157
Sports Support	Karnataka	4	11.25	1.966
	Kerala	4	10.25	1.79662
Sports Achievement	Karnataka	4	16.5	1.12509
	Kerala	4	17.5	0.87149
Coaching	Karnataka	4	15	1.42314
	Kerala	4	15	1.256

Table 4.64 shows that the universities of Karnataka (mean =23.50) have greater level of infrastructure than those of Kerala (mean =20.00). It also reveals that the universities in Karnataka (mean =11.25) give higher level of sports support than the universities in Kerala (mean =10.25). But the students in Kerala universities (mean=17.50) have higher level of sports achievement than those of Karnataka (mean=16.50). From the analysis, it can be concluded that on an average, universities in Karnataka have better infrastructure, support for sports, whereas Kerala state universities have better overall sports achievement. The standard deviation is very high in Karnataka as compared to Kerala in terms of infrastructure, because of large scale development of sports complexes and new sports facilities provided for the sportspersons. This might be the reason Kerala universities is leaving good and very much usable sports infrastructure and getting good achievements.

Table4.65 Independent sample t-test.

		Levene's Test for Equality of Variances		**t-test for Equality of Means**					
		F	**p-value**	**t-value**	**p-value**	**Mean Difference**	**Std. Error**	**95% Confidence Interval**	
								Lower	**Upper**
Infrastructure	Equal variances assumed	207.782	0.00	2.381	0.018	3.5	1.4701	0.5962	6.4037
	Equal variances not assumed			2.381	0.02	3.5	1.4701	0.5739	6.426
Sports support	Equal variances assumed	110.6	0.00	4.249	0.00	1	0.2353	0.5352	1.4648
	Equal variances not assumed			4.249	0.00	1	0.2353	0.5344	1.4655
Sports Achievement	Equal variances assumed	11.286	0.001	-6.285	0.00	-1	0.1591	-1.3142	-0.6857
	Equal variances not assumed			-6.285	0.00	-1. 000	0.1591	-1.3144	-0.6855
Coaching	Equal variances assumed	79	0.00	0.00	1	0.00	0.1591	-0.3142	0.3142
	Equal variances not assumed			0.00	1	0.00	0.15911	-0.3167	0.3167

Table 4.65 shows the results of Levene's Test for Equality of Variances. It is seen that there is significant difference in variance for infrastructure, sports support, and sports achievement between the universities of Karnataka and Kerala ($p<0.05$). Further, the independent sample t-test reveals that there is significant difference in the infrastructure, sports support, and sports achievement between the universities of Karnataka and Kerala ($p<0.05$). But there is no significant difference in the coaching facilities between the universities of the two states ($p > 0.05$). This clearly indicates that the achievements of the universities are more dependent on the availability of coaching facilities. The statistical comparison indicates that Karnataka universities have better infrastructure, sports support, sports achievement and coaching facilities than Kerala universities.

Correlation between Financial Assistance and Infrastructure Facility

In order to find out the relationship between financial assistance and infrastructure facilities, the investigator determined the score for infrastructure (Yes=1, No=0) and later used Pearson's correlation co-efficient for the variables.

Table 4.66 Correlation between Financial Assistance and Infrastructure Facility in Karnataka and Kerala state Universities.

Karnataka		
Financial Assistance vs Infrastructure Facility	Pearson's Correlation	0.573
	Sig. (2-tailed)	0.00
Kerala		
Financial Assistance vs Infrastructure Facility	Pearson's Correlation	0.529
	Sig. (2-tailed)	0.00

Table 4.66 explains the correlation between financial assistance and infrastructure facilities. It shows that there is significant positive correlation ($r= 0.573$ for Karnataka and $r= 0.529$ for Kerala) between financial assistance and infrastructure facility. Since the p-value is less than 0.05, the researcher accepted the hypothesis. From the above analysis,

it can be inferred that the universities receiving more amount of financial assistance have greater contribution towards infrastructure development.

Correlation between Income and Expenditure

The correlation between income and expenditure helps to find whether the universities spend according to their source of income. The results of the correlation coefficient are given in Table 4.67.

Table 4.67 Correlation between Income and Expenditure of Karnataka and Kerala state Universities.

Karnataka		**Expenditure**
Income	Pearson's Correlation	0.575
	Sig. (2-tailed)	0.002
Kerala		**Expenditure**
Income	Pearson's Correlation	0.575
	Sig. (2-tailed)	0.002

Table 4.67 shows that the p-value is less than 0.05 and therefore, statistically significant positive correlation (r=+0.575) is observed between income and expenditure for the universities of both the states. It can be inferred that the expenditure increases as the income increases. Overall, the statistical significance of the positive correlation underscores the importance of financial planning and resource allocation for universities in both the states. The findings can serve as valuable insights for university administrators and policymakers, aiding them in making informed decisions related to budgeting, funding allocation, and financial management to support the continuous development and advancement of the respective institutions.

Structured Equation Modelling

A model is developed to test whether the infrastructure facility of university, support from the university for sports, and coaching facility have significant role in the students' sports achievements in various national and state level games.

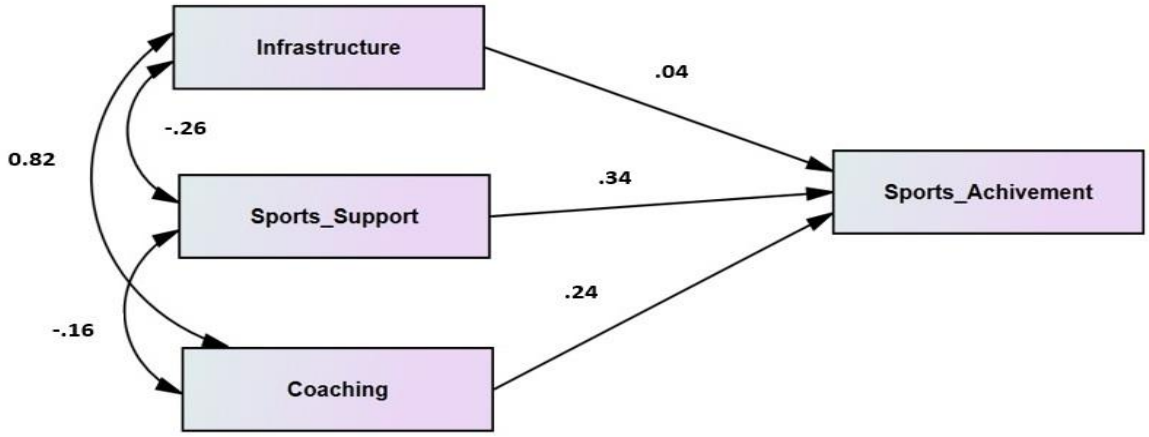

Figure 2 Structured Equation Model for University.

Table 4.68 Estimated coefficients along with p-value for Karnataka and Kerala state Universities.

			Estimate	S.E.	C.R.	p
Sports achievement	<---	Infrastructure	0.041	0.016	0.312	<0.05
Sports achievement	<---	Sports support	0.336	0.054	4.436	<0.05
Sports achievement	<---	Coaching	0.244	0.144	1.885	<0.05

Table 4.68 shows that when infrastructure goes up by 1 unit, sports achievement goes up by 0.041 unit, and when sports support goes up by 1 unit, sports achievement goes up by 0.336 unit. Further, it shows that when coaching facility goes up by 1 unit, sports achievement goes up by 0.244 unit.

Table 4.69 Fit Indices Model.

Fit Index	Accepted Threshold level	Structural Model Values
CMIN/DF	Values less than 3	0.144
RMSEA	Values less than 0.06	0.00
GFI	Values greater than 0.9	0.998
AGFI	Values greater than 0.9	0.977
NFI	Values greater than 0.9	0.954
CFI	Values greater than 0.9	0.973

Fit indices help improve or modify the developed mode. Table4.69gives the model fit indices. Since CMIN/DF is 0.144, which is less than 3, it is acceptable. Likewise, GFI (Goodness of Fit indices) and AGFI (Adjusted Goodness Fit Indices) are 0.998 and 0.977, which are more significant than 0.9; therefore, it is acceptable. In addition to these, CFI (Comparative fit index) and NFI (Normed fit index) are greater than 0.9; therefore, both these values are suitable for the model fit. It is also seen that the RMSEA value is 0.06, which is less than the threshold level stated by Brown and Cudeck (1993). Therefore, it can be concluded that the infrastructure facility, sports support, and coaching facility have significant influence upon the students taking part in regular practice in the college as well as university and directly affects their performance.

Discussion on Hypothesis

Hypothesis No.1

There is **significant** association between the location, nature of the college, and gender with the staff supported in the selected colleges of Karnataka and Kerala states.

From the chi-square value, since the p-value is greater than 0.05, hypothesis is rejected and alternative hypothesis is accepted. It can be concluded that there is **no significant** association between the location, nature of the college and gender, with the staff supported in the selected colleges of Karnataka and Kerala states..

Hypothesis No.2

There is **significant** association between the location, nature and status of the college, and gender, with the infrastructure facilities in the selected colleges of Karnataka and Kerala states.

From the chi-square value, since the p-value is greater than 0.05 for location, nature and status, null hypothesis is rejected and alternative hypothesis is accepted. The conclusion is that there is **no significant** association between the locations, nature and status of the infrastructure facilities in the selected colleges of Karnataka and Kerala states.

Hypothesis No.3

There is **significant** association between the presence of athletic tracks and demographic parameters in selected colleges of Karnataka and Kerala state.

From the chi-square value, since the p-value is greater than 0.05 for status and location, hypothesis is rejected and alternative hypothesis is accepted. It is concluded that there is **no significant** association between athletic tracks with status and location of the colleges for both the states.

Hypothesis No.4

There is **significant** association between the coaching ratings and demographic parameters in selected colleges of Karnataka and Kerala states.

From the chi-square value, since the p-value is greater than 0.05 for status, location and nature of the college, hypothesis is rejected and alternative hypothesis is accepted. The conclusion is that there is **no significant** association between coaching and status, location and nature of the colleges for both the states.

Hypothesis No.5

There is **significant** difference in the receipt of financial assistance among demographic profiles of the selected colleges in Karnataka and Kerala states.

From the ANOVA table, since the p-value is greater than 0.05 for status, location and nature of the college, hypothesis is rejected and alternative hypothesis is

accepted. It is concluded that there is **no significant** association in the receipt of financial assistance with status, location and nature of the colleges for both the states.

Hypothesis No.6

There is **significant** association between income and expenditure in selected colleges of Karnataka and Kerala states.

From the t-test, since $p<0.05$, hypothesis is accepted. The result shows that there is **significant** association between income and expenditure in the colleges of Karnataka and Kerala states.

Hypothesis No.7

There is a statistic **significant** relationship between financial assistance and infrastructure facilities in the selected colleges of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that financial assistance has **significant** influence on the infrastructure facilities in the colleges of Karnataka and Kerala states.

Hypothesis No.8

Financial assistance has **significant** influence on the infrastructure facilities in the selected colleges of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that financial assistance has **significant** influence on the infrastructure facilities in the selected colleges of Karnataka and Kerala states.

Hypothesis No.9

Financial assistance and infrastructure facilities have **significant** influence on the sports achievements in the selected colleges of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that the infrastructure facilities have **significant** influence on sports achievements in the colleges of Karnataka and Kerala states.

Hypothesis No.10

There is **significant** difference in the receipt of financial assistance among the demographic profiles in the selected universities of Karnataka and Kerala states.

From the ANOVA table, since the p-value is greater than 0.05 for status, location and nature of the college, hypothesis is rejected and alternative hypothesis is accepted. It is thus concluded that there is **no significant** association between receiving financial assistance and the status, location and nature of the universities in Karnataka and Kerala states**.**

Hypothesis No.11

Infrastructure facilities **significantly** influence the sports achievements in the selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that the infrastructure facilities have **significant** influence on the sports achievements in the universities of Karnataka and Kerala states.

Hypothesis No.12

Coaching **significantly** influences the sports achievements in the selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that coaching has **significant** influence on sports achievements in the universities of Karnataka and Kerala states.

Hypothesis No.13

There is **significant** difference in infrastructure facilities, sports support, sports achievements, and coaching between the selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that there is **significant** difference between the infrastructure facilities, sports support and sports achievement in the universities of Karnataka and Kerala. Regarding coaching, there is **no significant** difference ($p<0.05$) in the universities of the two states.

Hypothesis No.14

Financial assistance **significantly** influences the infrastructure facilities in the selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that financial assistance has **significant** influence on the infrastructure facility in the universities of Karnataka and Kerala states.

Hypothesis No.15

There is **significant** association between income and expenditure in the selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that there is **significant** association between income and expenditure in the universities of Karnataka and Kerala states.

Hypothesis No.16

Infrastructure facilities, sports support and coaching have a **significant** influence on the students' sports achievement at selected universities of Karnataka and Kerala states.

From the t-test, since $p < 0.05$, hypothesis is accepted. The result shows that the university's infrastructure facilities, sports support and coaching have **significant** influence on the students' sports achievement in the games.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The purpose of the study was to evaluate the sports performance and facilities of physical education and sports in the universities of Karnataka and Kerala. The study was delimited to the different universities of both the states. The study was further delimited to the sports performance and facilities of physical education and sports in the universities of Karnataka and Kerala.

Most of the universities of Karnataka and Kerala states have not been showing substantial performance in inter-university tournaments except a few university teams. It was therefore presumed convenient and worthwhile to carry out a critical analysis of the sports performance of the universities in Karnataka and Kerala in relation to the sports infrastructure, sports personnel, and budgetary provisions. And thereby arrive at suggestions, ways and means to improve the standard of sports and games in the overall context of the states and the nation.

The questionnaire technique was used to gather essential data from the directors of physical education at various universities and colleges in Karnataka and Kerala. The research scholar has personally visited different universities and engaged in discussions with experts and relevant stakeholders, who assisted in the information collection process.

The questionnaire was developed under the guidance and consultation of a well-qualified and experienced faculty in physical education, with careful consideration and seriousness applied throughout. To ensure comprehensive coverage of the surveyed area, great attention was given to all the relevant aspects of the study to obtain valuable and meaningful responses from the participants.

The questions were constructed and organized logically, allowing for a coherent flow in the responses. Efforts were made to ensure that the questions were simple, clear, and relevant, thereby minimizing any potential confusion.

The copies of the questionnaire were distributed to eight university directors of physical education and 40 physical education directors, with a request for accurate and truthful responses. The researcher personally visited all the colleges and universities in Karnataka and Kerala to collect the completed questionnaires.

5.2 Conclusions

Physical education and competitive sports are seen as processes that help individuals to adapt to society, contributing to the maintenance and advancement of social order. This system aims to cultivate rational, mature, and knowledgeable individuals. Through physical education and sports, an individual's behavior is modified to facilitate better societal integration, making them productive and valuable citizens. A pragmatic approach to physical education emphasizes learning through physical movement.

For many years, athletes have represented their respective universities in the South-Zone and All India Inter-University competitions within Karnataka and Kerala. It has been observed that these universities offer superior sports infrastructure facilities. The researcher emphasizes that the colleges with better sports infrastructure provide better support to their athletes in both national and international competitions. It can be stated that the sports infrastructure and facilities in Karnataka's sports academies are superior to those in Kerala's academies. Additionally, the funds raised by NGOs and charitable trusts are higher in Karnataka compared to Kerala. Factors such as location, nature, and status also appear to be more favorable in Karnataka than in Kerala. However, despite the establishment of universities, the infrastructure and sports facilities are not utilized systematically and consistently by athletes throughout the year. This neglect can lead to poor maintenance of both the grounds and equipment, resulting in financial burdens for the universities involved.

5.3 Recommendations

1. The findings of this study may serve as a basis for the government to enhance sports infrastructure facilities across the nation.

2. This study is recommended for all colleges to help develop and improve sports infrastructure in their respective states.
3. The same study could be implemented to compare the inter-university and zonal sports performance on an annual basis.
4. Similar study may be conducted separately for men and women for all the universities.
5. Similar study may be conducted for medical and technical universities or professional universities separately.
6. Similar studies could be carried out for team games and individual games, it might guide the sports persons to improve their performance.

Suggestions for further studies

1. Selected colleges and universities were included in this investigation. By taking into account all the universities in Karnataka and Kerala states, a similar study might be carried out with a larger number of respondents including technical, health science, agriculture, deemed to be universities and autonomous universities.
2. A comparative study can be conducted between the Government and Private universities on the available sports infrastructure facilities and their influence on the sports achievements.
3. A comparative study can be conducted between south India and north India Universities on the available sports infrastructure facilities and their influence on the sports achievements.
4. A similar study can be conducted for only women colleges of Karnataka and Kerala states.

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